8-2008

Richfield Field Office Planning Area - Proposed Resource Management and Final Environmental Impact Statement

United States Department of the Interior, Bureau of Land Management

Richfield Field Office
Proposed Resource Management Plan & Final Environmental Impact Statement

Volume 1 of 3

BUREAU OF LAND MANAGEMENT | UTAH

Richfield Field Office

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

August 2008

BLM Mission

To sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

BLM-UT-PL-08-004-1610
UT-050-2007-090 EIS
FES 08-25

United States Department of the Interior
BUREAU OF LAND MANAGEMENT

Utah State Office
P.O. Box 45155
Salt Lake City, UT 84145-0155
http://www.blm.gov

IN REPLY REFER TO:

UT-050-1610-012J

Dear Reader:

Enclosed is the Proposed Resource Management Plan (PRMP) and Final Environmental Impact Statement (FEIS) for the Richfield Field Office. The Bureau of Land Management (BLM) prepared the PRMP/FEIS in consultation with cooperating agencies, taking into account public comments received during this planning effort. This PRMP/FEIS provides a framework for the future management direction and appropriate use of BLM-administered lands and resources located in Sanpete, Sevier, Piute, Wayne, and Garfield counties, Utah. The document contains both land use planning decisions and implementation decisions to guide the BLM's management of the Richfield Field Office. The PRMP/FEIS is open for a 30-day review and protest period beginning the date the U.S. Environmental Protection Agency (EPA) publishes the Notice of Availability of the FEIS in the *Federal Register*.

This PRMP/FEIS has been developed in accordance with the National Environmental Policy Act of 1969 (NEPA) and the Federal Land Policy and Management Act of 1976 (FLPMA). The PRMP/FEIS is largely based on Alternative B, the Preferred Alternative in the Draft RMP and EIS, which was released in October 2007. This PRMP/FEIS contains the proposed plan and potential impacts of the proposed plan. The alternatives presented in the Draft RMP/EIS are also provided for comparative purposes. Major comments received during the public review period of the Draft RMP/EIS and responses to these comments are provided on an attached CD. To aid the reader, substantive changes made between the Draft RMP/EIS and the PRMP/FEIS are described in Chapter 1 and are detailed in Appendix 20.

Pursuant to BLM's planning regulations at 43 CFR 1610.5-2, any person who participated in the planning process for this PRMP and has an interest which is or may be adversely affected by the planning decisions may protest approval of the planning decisions within 30 days from date the Environmental Protection Agency publishes the Notice of Availability in the *Federal Register*. For further information on filing a protest, please see the accompanying protest regulations in the pages that follow (labeled as Attachment 1). The regulations specify the required elements of your protest. Take care to document all relevant facts. As much as possible, reference or cite the planning documents or available planning records (e.g. meeting minutes or summaries, correspondence, etc.). To aid in ensuring the completeness of your protest, a protest check list is attached to this letter (labeled as Attachment 2). If your protest does not include all of the elements outlined in 43 CFR 1610.5-2 the BLM will not respond to your protest.

E-mailed and faxed protests will not be accepted as valid protests unless the protesting party also provides the original letter by either regular or overnight mail postmarked by the close of the protest period.

Under these conditions, the BLM will consider the e-mailed or faxed protest as an advance copy and will afford it full consideration. If you wish to provide the BLM with such advance notification, please direct faxed protests to the attention of Brenda Hudgens-Williams- BLM protest coordinator at 202-452-5112, and e-mailed protests to: Brenda_Hudgens-Williams@blm.gov.

All protests, including the follow-up letter (if e-mailing or faxing) must be in writing and mailed to the following address:

Regular Mail:	Overnight Mail:
Director (210)	Director (210)
Attention: Brenda Williams	Attention: Brenda Williams
P.O. Box 66538	1620 L Street, N.W., Suite 1075
Washington, D.C. 20035	Washington, D.C. 20036

Before including your address, phone number, e-mail address, or other personal identifying information in your protest, be advised that your entire protest – including your personal identifying information – may be made publicly available at any time. While you can ask us in your protest to withhold from public review your personal identifying information, we cannot guarantee that we will be able to do so.

The BLM Director will make every attempt to promptly render a decision on each protest. The decision will be in writing and will be sent to the protesting party by certified mail, return receipt requested. The decision of the BLM Director shall be the final decision of the Department of the Interior.

Upon resolution of all land use plan protests, the BLM will issue an Approved RMP and Record of Decision (ROD). The Approved RMP and ROD will be mailed or made available electronically to all who participated in the planning process and will be available to all parties through the "Planning" page of the BLM national website (*http://www.blm.gov/planning*), or by mail upon request.

Unlike land use planning decisions, implementation decisions are not subject to protest under the BLM planning regulations, but are subject to an administrative review process, through appeals to the Office of Hearings and Appeals (OHA), Interior Board of Land Appeals (IBLA) pursuant to 43 CFR, Part 4 Subpart E. Implementation decisions generally constitute the BLM's final approval allowing on-the ground actions to proceed. Where implementation decisions are made as part of the land use planning process, they are still subject to the appeals process or other administrative review as prescribed by specific resource program regulations once the BLM resolves the protests to land use planning decisions and issues an Approved RMP and ROD. Implementation-level decisions in the PRMP/FEIS are indicated by *italic text* and an asterisk (*) in Chapter 2. The Approved RMP and ROD will also clearly identify the implementation decisions made in the plan that may be appealed to the Office of Hearing and Appeals.

Sincerely,

Selma Sierra
Utah State Director

Attachment 1

[Code of Federal Regulations]
[Title 43, Volume 2]
[Revised as of October 1, 2002]
From the U.S. Government Printing Office via GPO Access
[CITE: 43CFR1610.5-2]

TITLE 43--PUBLIC LANDS: INTERIOR

CHAPTER II--BUREAU OF LAND MANAGEMENT, DEPARTMENT OF THE INTERIOR

PART 1600--PLANNING, PROGRAMMING, BUDGETING--Table of Contents

Subpart 1610--Resource Management Planning

Sec. 1610.5-2 Protest procedures.

(a) Any person who participated in the planning process and has an interest which is or may be adversely affected by the approval or amendment of a resource management plan may protest such approval or amendment. A protest may raise only those issues which were submitted for the record during the planning process.

(1) The protest shall be in writing and shall be filed with the Director. The protest shall be filed within 30 days of the date the Environmental Protection Agency published the notice of receipt of the final environmental impact statement containing the plan or amendment in the Federal Register. For an amendment not requiring the preparation of an environmental impact statement, the protest shall be filed within 30 days of the publication of the notice of its effective date.

(2) The protest shall contain:

(i) The name, mailing address, telephone number and interest of the person filing the protest;

(ii) A statement of the issue or issues being protested;

(iii) A statement of the part or parts of the plan or amendment being protested;

(iv) A copy of all documents addressing the issue or issues that were submitted during the planning process by the protesting party or an indication of the date the issue or issues were discussed for the record; and

(v) A concise statement explaining why the State Director's decision is believed to be wrong.

(3) The Director shall promptly render a decision on the protest. The decision shall be in writing and shall set forth the reasons for the decision. The decision shall be sent to the protesting party by certified mail, return receipt requested.

(b) The decision of the Director shall be the final decision of the Department of the Interior.

Attachment 2

Resource Management Plan Protest
Critical Item Checklist

The following items *must* be included to constitute a valid protest whether using this optional format, or a narrative letter.
(43 CFR 1610.5-2)

Before including your address, phone number, e-mail address, or other personal identifying information in your **protest**, be advised that your entire **protest**--including your personal identifying information--may be made publicly available at any time. While you can ask us in your **protest** to withhold from public review your personal identifying information, we cannot guarantee that we will be able to do so. All submissions from organizations and businesses, and from individuals identifying themselves as representatives or officials of organizations and businesses, will be available for public inspection in their entirety.

Resource Management Plan (RMP) or Amendment (RMPA) being protested:

Name:
Address:
Phone Number: ( )

Your interest in filing this protest (how will you be adversely affected by the approval or amendment of this plan?):

Issue or issues being protested:

Statement of the part or parts of the plan being protested:

Chapter:
Section:
Page:
(or) Map:

Attach copies of all documents addressing the issue(s) that were submitted during the planning process by the protesting party, <u>OR an indication of the date the issue(s) were discussed for the record</u>.
Date(s):

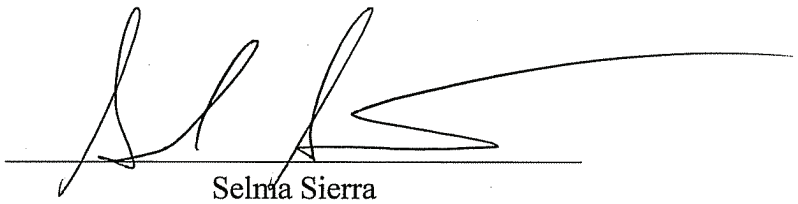
A concise statement explaining why the State Director's decisions is believed to be wrong:

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

THE RICHFIELD FIELD OFFICE PROPOSED RESOURCE MANAGEMENT PLAN AND FINAL ENVIRONMENTAL IMPACT STATEMENT

Bureau of Land Management
Utah State Office
Salt Lake City, Utah

Prepared by the
Richfield Field Office
August 2008



Selma Sierra
Utah State Director

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Richfield Field Office Planning Area
Proposed Resource Management Plan and Final Environmental Impact Statement

Lead Agency: U.S. Department of the Interior, Bureau of Land Management
Type of Action: Final, Administrative
Jurisdiction: Comprising all of Sanpete, Sevier, Wayne, Piute, and portions of Garfield and Kane Counties, Utah.

Abstract: The Richfield Proposed Resource Management Plan and Final Environmental Impact Statement (PRMP/FEIS) describes and analyzes the Proposed RMP and other alternatives presented in the Draft RMP and EIS (DRMP/DEIS) for the planning and management of public lands and resources administered by the Bureau of Land Management (BLM), Richfield Field Office in Utah. The Proposed RMP is open for a 30-day review and protest period beginning, August 8, 2008, the date the U.S. Environmental Protection Agency (EPA) publishes the Notice of Availability (NOA) of the Final EIS in the Federal Register.

The Proposed RMP was crafted primarily from the Preferred Alternative presented in the DRMP/DEIS (Alternative B) and includes other decisions within the range of alternatives (Alternatives N, A, C, and D) in response to public comments and internal review. The No Action Alternative (Alternative N) reflects current management. The BLM has removed the DRMP/DEIS Alternative B (Preferred Alternative) from the PRMP/FEIS. The other DRMP/DEIS Alternatives (Alternatives N, A, C, and D) and analyses are carried forward in the PRMP/FEIS only for comparative purposes and to correct some mistakes that were identified during the public comment period.

Protest: Protests must be postmarked or received no later than 30 days after publication of the NOA by the EPA in the *Federal Register*. The 30-day protest period (identified above) will not be extended. Refer to the instructions in the dear reader letter for additional information on how to protest. The close of the protest period will be announced in news releases, newsletters, and on the Richfield RMP website at http://www.blm.gov/ut/st/en/fo/richfield/planning.html.

For Further Information Contact:
Bureau of Land Management, Richfield Field Office
Attn: John Russell, RMP Project Manager
150 East 900 North
Richfield, Utah 84701
Telephone (435) 896-1500

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PREFACE

How to Use This Document

This section explains where information is located and provides an overview of the Proposed Resource Management Plan (PRMP) and the associated Final Environmental Impact Statement (FEIS) process. The Proposed RMP/Final EIS is organized into three separate volumes containing the following major chapter headings and information.

Volume I

- **Chapter 1, Introduction, Purpose and Need—**Introduces the purpose and need to which the Bureau of Land Management (BLM) is responding; provides an overview of the BLM planning process and statutes (laws), limitations, and guidelines the BLM must adhere to in preparing an RMP; and presents the scope of issues the RMP must address in detail. It describes the relationship of this RMP with other plans.

- **Chapter 2, Description of Alternatives—**Describes management guidance common to all alternatives, as well as alternatives considered but eliminated from further consideration. It also presents specific management actions proposed under the alternatives and a comparative summary of the impacts of each alternative. The Common to All Alternatives category includes management actions that may be rule, regulation, law, policy, or best management practices (BMP) that the BLM will implement regardless of the alternative selected. The No Action Alternative (Alternative N) reflects current management. Management actions for the No Action Alternative, Proposed RMP, and three alternatives (A, C, and D) are described in Chapter 2. These alternatives present a reasonable range based on new information, guidance, policy, or scientific knowledge. In the DRMP/DEIS, Alternative B was identified as BLM's preferred alternative. In the Final EIS, Alternative B has been modified based on BLM review and public comment to form the Proposed RMP.

- **Chapter 3, Affected Environment—**Describes the Richfield Field Office (RFO) and the existing environmental conditions that would be affected by the alternatives. This chapter is organized similarly to Chapter 2, except socioeconomic conditions are included.

Volume II

- **Chapter 4, Environmental Consequences—**Forms the scientific and analytic basis for the comparison of environmental impacts of the alternatives, including the No Action Alternative, as described in Chapter 2. Under each alternative, analysis is organized by resource (as described for Chapter 2) and socioeconomic conditions.

- **Chapter 5, Consultation and Coordination—**Describes the scoping process and other past and planned agency consultation and public involvement activities. Chapter 5 also includes responses to comments from the cooperating agencies and from public comments that required a change to the Proposed Resource Management Plan/Final Environmental Impact Statement (PRMP/FEIS).

Volume III

- **Glossary—**Provides an alphabetized list of definitions for terms used in this PRMP/FEIS.

- **Acronyms—**Provides an alphabetized list defining acronyms and abbreviations used in this PRMP/FEIS.
- **References—**Provides details for references cited within the document. Most cited documents are available from other public sources such as libraries; many are available for public review at the RFO.
- **Appendices—**Includes documents and information that support existing resource conditions or situations, substantiate analysis, provide resource management guidance, explain processes, or provide other information directly relevant to the PRMP/FEIS.
- **Maps.**
- **CD of Comments and Responses on the Draft RMP/EIS.**

EXECUTIVE SUMMARY

INTRODUCTION

In accordance with the National Environmental Policy Act of 1969 (NEPA, 42 United States Code [U.S.C.] 4321 et seq.) and under the authority of the Federal Land Policy and Management Act of 1976 (FLPMA, 43 U.S.C. 1701 et seq.), the Bureau of Land Management (BLM) has prepared a Proposed Resource Management Plan/Final Environmental Impact Statement (PRMP/FEIS) for public lands and resources administered by the Richfield Field Office (RFO) in Utah. The PRMP/FEIS includes an identification and analysis of the Proposed RMP for future management of the public lands and resources that are administered by the BLM's RFO. The planning area is located in south-central Utah and includes all of Sanpete, Sevier, Piute, and Wayne counties and portions of Garfield and Kane counties, an area totaling 5.4 million acres. Of this area, the BLM manages a 2.1 million-acre surface and subsurface (mineral) estate, an additional 1.5 million acres of federal mineral resources underlying the national forests, and 95,000 acres of split-estate lands on which the mineral estate is held by the Federal Government but the surface rights belong to the State or private parties. The planning area is administered primarily by the RFO with additional support from the BLM Hanksville field station. Decisions in this PRMP/FEIS apply only to BLM-administered public lands (surface and subsurface) and resources.

The PRMP/FEIS resulted from public involvement and the gathering of the best available information. The BLM posted a Notice of Intent (NOI) in the *Federal Register* to initiate the scoping phase of the planning process on November 1, 2001. Citizens and groups submitted comments from November 2001 to April 2002, helping the BLM identify the issues that were addressed during this planning process. Based on agency expertise and on issues raised by the public, the BLM prepared a Draft Resource Management Plan/Draft Environmental Impact Statement (DRMP/DEIS) with a full description of the affected environment, a reasonable range of alternatives, and an analysis of the impacts of each alternative. The BLM posted the Notice of Availability (NOA) of the DRMP/DEIS on October 26, 2007. The public submitted comments on the DRMP/DEIS from October 2007 to January 2008. Based on comments on the DRMP/DEIS and internal review, the BLM wrote the PRMP/FEIS and posted a NOA for the PRMP/FEIS on August 8, 2008.

DRAFT ALTERNATIVES

Five alternatives, including a No Action Alternative, were analyzed in detail in the DRMP/DEIS (2007). The alternatives were developed to address major planning issues that were identified through public scoping and to provide management direction for resource programs. The alternatives are as follows:

- **Alternative N (No Action)** would continue to manage the land and resources according to direction prescribed in the six existing Land Use Plans (LUPs), as modified by subsequent law, regulation, and policy. Of the alternatives, Alternative N would least restrict cross-country off-highway vehicle (OHV) use, designate the most miles of open routes, continue the designation of four areas of critical environmental concern (ACEC) (14,780 acres), continue identification of one special recreation management area (SRMA) (120 acres), and manage all 12 eligible wild and scenic river (WSR) segments (135 miles) to protect their outstandingly remarkable values.
- **Alternative A** would manage the land and resources with an emphasis on providing motorized access and encouraging commodity production—mining, grazing, commercial recreation, commercial woodland products harvesting, and energy development, including oil and gas—using the minimum restrictions required to meet legal, regulatory, and policy mandates. To

protect resources, Alternative A relies on existing laws, regulations, and policies, rather than on special management prescriptions or special designations. Of the alternatives, Alternative A would least restrict oil and gas leasing and mining, designate no ACECs, recommend no suitable WSR segments, and identify five SRMAs (514,500 acres).

- **Alternative B (Preferred Alternative)** would manage the land and resources by relying primarily on existing law, regulation, and policy and by applying special designations and restrictive management prescriptions only as needed to protect threatened or otherwise important resources. Alternative B would eliminate overlapping wilderness study areas (WSA)/ACEC designations, designate two ACECs (2,530 acres), recommend two suitable WSR segments (Dirty Devil and Fremont Gorge [59 miles]), identify five SRMAs (838,700 acres), and provide protection to 12 areas that would be managed as non-WSA lands with wilderness characteristics (78,600 acres) to protect, preserve, and maintain their wilderness characteristics.
- **Alternative C** would manage the land and resources by putting more emphasis on protecting special and sensitive natural resources. Alternative C would protect all 12 eligible river segments as suitable WSRs, designate all 16 potential ACECs (886,810 acres), identify four SRMAs (930,000 acres), and prohibit cross-country OHV use.
- **Alternative D** would manage the land and resources by putting the most emphasis on protecting special, important, and sensitive resources and by applying special designations and restrictive prescriptions. Alternative D would recommend all 12 eligible river segments as suitable WSRs, designate all 16 potential ACECs (886,810 acres), identify seven SRMAs (1,358,100 acres), and provide the greatest protection to scenic values and non-WSA lands with wilderness characteristics (682,600 acres) to protect, preserve, and maintain their wilderness characteristics. Alternative D would prohibit cross-country OHV use, designate the fewest miles of routes open to motor vehicles, and impose the greatest restrictions on OHVs, oil and gas leasing, and mining.

The alternatives were described in detail in Chapter 2 and analyzed in Chapter 4 of the DRMP/DEIS. Based on the Chapter 4 analysis, Alternative N was determined to have the greatest overall environmental impact, followed by Alternative A, Alternative B, and Alternative C, respectively. Alternative D would have the least environmental impact and would provide the greatest protection for most elements of the affected environment. Conversely, Alternative A would provide the greatest opportunities and the least restrictions for developing energy and mineral resources; whereas Alternative N would least restrict OHV use.

THE PROPOSED RMP

The Proposed RMP (summarized in Table ES-1) was crafted primarily from the Preferred Alternative presented in the DRMP/DEIS (Alternative B) and includes other decisions within the range of alternatives (Alternatives N, A, C, and D) in response to public comments and internal review. The No Action Alternative (Alternative N) reflects current management. The BLM has removed the DRMP/DEIS Alternative B (Preferred Alternative) from the PRMP/FEIS. The other DRMP/DEIS Alternatives (Alternatives N, A, C, and D) and analyses are carried forward in the PRMP/FEIS only for comparative purposes and to correct some mistakes that were identified during the public comment period.

Table ES-1 Proposed RMP Summary

Resource/ Resource Use	Proposed RMP
Air Quality	Manage all BLM and BLM-authorized actions to maintain air quality as prescribed by federal, tribal, state, and local laws and regulations. This management includes meeting the National Ambient Air Quality Standards (NAAQS) and ensuring that BLM-authorized actions continue to keep the area in attainment, meet Prevention of Significant Deterioration (PSD) Class II standards, and protect Class I airsheds. Mitigate, through best-available control technology, potential adverse impacts of site-specific actions, as identified in NEPA documents prepared at the time an action is proposed and as part of the state permitting process and PSD review.
Soil Resources	Maintain or improve soil resources through implementation of *Standards for Rangeland Health* and other appropriate protection measures.
Water Resources	Maintain or improve water quality and quantity through implementation of *Standards for Rangeland Health* and other appropriate protection measures.
Vegetation	Maintain or improve soil, water, and vegetation resources through implementation of *Standards for Rangeland Health* and other appropriate protection measures.
Cultural Resources	Reduce imminent threats to significant cultural resources from natural and human-caused deterioration or potential conflicts with other resources.
	Allocate and manage cultural resource sites for scientific use, public use, conservation use, traditional use, and experimental use categories.
Paleontological Resources	Require paleontological inventories in Class I and Class II areas.
Visual Resources	Manage areas according to the following Visual Resource Management Classes: • Class I: 446,900 acres • Class II: 249,800 acres • Class III: 393,100 acres • Class IV: 1,038,200 acres
Special Status Species	Conserve and recover all special status species (SSS) and their habitats. Employ strategies to avoid or reduce the fragmenting of habitat. Manage oil and gas leasing as open subject to major constraints (NSO) within ½ mile of greater sage-grouse leks. Allow no surface disturbing or otherwise disruptive activities in greater sage-grouse winter habitat from December 15 through March 14. Allow no surface disturbing or otherwise disruptive activities within 2 miles of a greater sage-grouse lek from March 15 to July 15 to protect sage-grouse breeding and brood-rearing habitat.

Table ES-1 Proposed RMP Summary

Resource/ Resource Use	Proposed RMP
Fish and Wildlife	Maintain, restore, protect, and enhance habitats to support a diversity of fish and wildlife species.
Wild Horses and Burros	Manage wild horses and burros at appropriate management levels (AML) to ensure a natural ecological balance between horse and burro populations and wildlife, livestock, vegetation resources, and other resource values (Map 3-8).
	Manage Canyonlands Herd Management Area (HMA) with an AML of 60–100; allocate 600 Animal Unit Months (AUM) for wild burros.
Fire and Fuels Management	Manage fire and fuels to protect life, firefighter safety, property, and other critical resources and, where appropriate, to restore natural systems.
	Manage fire and fuels through treatments, averaging 73,600 acres annually, for a maximum level of 1,472,000 acres over the life of the PRMP/FEIS. Use the full range of treatment types, including prescribed fire; mechanical, chemical, biological, and cultural treatments; and wildland fire use.
Non-Wilderness Study Area Lands with Wilderness Characteristics	Manage the following 12 non-WSA lands with wilderness characteristic areas (78,600 acres) specifically to protect, preserve, and maintain their wilderness characteristics: (1) Dirty Devil/French Spring (6,100 acres) (2) Dogwater Creek (3,100 acres) (3) Horseshoe Canyon South (12,200 acres) (4) Jones Bench (2,600 acres) (5) Labyrinth Canyon (2,800 acres) (6) Little Rockies (9,500 acres) (7) Mount Ellen—Blue Hills (3,900 acres) (8) Mount Pennell (4,700 acres) (9) Notom Bench (8,200 acres) (10)Ragged Mountain (7,900 acres) (11)Red Desert (8,900 acres) (12)Wild Horse Mesa (8,700 acres) Protect, preserve and maintain the wilderness characteristics in the 12 areas (78,600 acres) of non-WSA lands with wilderness characteristics through the following land allocations and prescriptions: • Designate as Visual Resource Management (VRM) Class II • Limit motorized use to designated routes

Table ES-1 Proposed RMP Summary

Resource/ Resource Use	Proposed RMP
	• Retain lands in public ownership • Designate as an Avoidance Area for rights-of-way (ROW) • Designate leasing category as open to leasing subject to major constraints (no surface occupancy [NSO]) • Close to mineral material sales • Designate as unavailable for further consideration for coal leasing • Continue maintenance and use of existing facilities Prohibit private or commercial woodland harvest or seed collection Healthy Lands Initiative projects could be considered if they improve the overall goals and objectives for managing the wilderness characteristics of these areas
Forestry and Woodland Products	Provide forest and woodland products on a sustainable basis consistent with other land management objectives.
Livestock Grazing	Designate forage allocations as depicted on Map 2-6 and in Appendix 7 (Table A7-2).
Recreation	Establish five SRMAs (860,390 acres) to manage recreational use and to mitigate impacts caused by this use, such as uncontrolled camping, parking, and other activities. Establishing the Factory Butte SRMA would limit the impacts on vegetation from cross-country OHV use to an 8,500 acre area. Constructing facilities in the Big Rocks SRMA would have localized adverse impacts from removal of vegetation in those areas; long-term impacts would be beneficial by concentrating use areas and thus limiting the extent of vegetation disturbance. Managing the Dirty Devil/Robbers Roost SRMA (290,500 acres) for primitive and semi-primitive recreation would reduce the potential for surface disturbance and localized removal of vegetation because of recreation. Closing canyons within the Dirty Devil/Robbers Roost SRMA to OHV recreation use and limiting OHV recreation use to designated routes would reduce potential impacts to vegetation. Managing the Capitol Reef Gateway SRMA (12,800 acres) for a natural recreation experience and the development of facilities would have localized adverse impacts from removal of vegetation in those areas; long-term impacts would be beneficial by concentrating use areas and thus limiting the extent of vegetation disturbance. Managing the Henry Mountains SRMA for primitive and semi-primitive recreation would indirectly maintain or reduce the potential for soil disturbance.
Travel Management	Manage areas according to the following travel management designations: • Open: 9,890 acres • Limited: 1,908,210 acres • Closed: 209,900 acres

Table ES-1 Proposed RMP Summary

Resource/ Resource Use	Proposed RMP
	• Designated routes: 3,739 miles* *Implementation-level decision* • Designated routes with seasonal closures or size/width restrictions: 538 miles • Closed routes: 345 miles
Lands and Realty	Retain public lands in federal ownership, unless disposing of a particular parcel would serve the national interest. Consider land tenure adjustments (e.g., exchanges and acquisitions) that meet identified criteria.
	Identify 92 parcels, totaling 13,400 acres, for sale under Section 203 of the FLPMA.
	Review existing withdrawals to determine whether those lands are serving the purposes for which they were withdrawn.
	Continue existing withdrawals (154,700 acres); recommend 21,500 acres for withdrawal from mineral entry. Total acres: 176,200
	Identify 153,600 acres as avoidance areas and 446,700 acres as exclusion areas for ROWs.
Leasable Minerals	Identify lands available for oil and gas leasing and development subject to the following lease categories: • Open to leasing subject to the standard terms and conditions: 608,700 acres • Open to leasing subject to moderate constraints (timing limitation, Controlled Surface Use [CSU]): 917,500 acres • Open to leasing subject to major constraints (NSO): 154,500 acres • Closed to leasing: 447,300 acres
Locatable Minerals	Continue existing withdrawals (154,700 acres); recommend 21,500 acres for withdrawal. Total acres: 176,200
Salable Minerals (Mineral Materials)	Identify lands available for development of mineral materials subject to the following lease categories: • 447,300 acres closed to mineral material disposal • 608,700 acres open subject to standard stipulations • 1,072,000 acres open with restrictions
Wilderness Study	Manage 11 existing WSAs (Map 3-14) in a manner that does not impair their suitability for designation as wilderness in accordance with BLM Handbook H-8550-1, *Interim Management Policy for Lands Under Wilderness Review* (IMP).

* *This is an implementation-level decision that cannot be protested under the planning regulations. Please see the cover letter for further information.*

Table ES-1 Proposed RMP Summary

Resource/ Resource Use	Proposed RMP
Areas	Designate as VRM Class I.
	Designate as limited or closed to OHV use: • Limited: 271,600 acres • Closed: 175,300 acres
Wild and Scenic Rivers	Manage suitable river segments in a manner that would protect their outstandingly remarkable values, tentative classification, and free-flowing nature. River corridors of eligible rivers that are determined not suitable would be managed according to other resource decisions for the Proposed RMP. Suitable: Capitol Gorge (the Fremont River immediately above Capitol Reef National Park), 1 segment, 5 miles
Areas of Critical Environmental Concern	Provide special management attention to relevant and important values, resources, natural systems, and hazards in designated ACECs. Potential ACECs that are not designated would be managed according to other resource decisions for the Proposed RMP.
	Designate two ACECs totaling 2,530 acres: the North Caineville Mesa ACEC and the Old Woman Front ACEC.

Major Changes from the Draft RMP to the Proposed RMP

Review of and comments on the DRMP/DEIS have resulted in several changes and the subsequent development of the PRMP/FEIS. Changes are in response to a combination of public comments, meetings with cooperating agencies, internal review, and changes in BLM policy and management direction. Some specific comments suggested that alternatives to maximize particular uses or to maximize protection of certain resources should be analyzed in detail. Although these types of alternatives were considered, they were not analyzed in detail because they did not meet BLM's multiple use and sustained yield mandate as established in the FLPMA or the planning criteria set out in the DRMP/DEIS. Other comments suggested consideration of items outside the scope of BLM's decision authority and therefore were not considered in this PRMP/FEIS. Changes from the DRMP/DEIS include the following:

- The DRMP/DEIS Preferred Alternative (Alternative B) has been modified and renamed the Proposed RMP.
- Maps were updated to reflect changes in the Proposed RMP and to correct errors.
- Air Quality: Air quality emissions calculations were completed for each alternative.
- Livestock Grazing: Temporary non-renewable use of grazing was added to reduce site-specific fuels (i.e., cheat grass).
- Non-WSA lands with wilderness characteristics: Management prescriptions for non-WSA lands with wilderness characteristics were added to the Proposed RMP. Twelve land units (totaling 78,600 acres) would be managed to protect, preserve, and maintain their wilderness characteristics.
- Recreation:
  - Under the PRMP/FEIS, the size of the Factory Butte SRMA was increased, and the size of the Big Rocks SRMA was decreased.
- Travel Management:
  - The boundary of the Factory Butte Play Area was adjusted to designate OHV play areas while avoiding sensitive plant species.
  - The sizes of the Big Rocks Trails Area and the Glenwood Play Area were decreased.
  - The Mayfield Open Area was eliminated from the PRMP/FEIS.
- Wild and Scenic Rivers: The Fremont River in the Fremont River Gorge would be found suitable as a wild river for inclusion in the National Wild and Scenic River System (NWSRS), whereas the Dirty Devil River would be found non-suitable for inclusion in the NWSRS.

ENVIRONMENTAL CONSEQUENCES

The environmental consequences that could result from the Proposed RMP were analyzed relative to meaningful direct, indirect, short-term, and long-term impacts. The impacts of each alternative are summarized in Chapter 2 and described in Chapter 4. Also included in Chapter 4 is a discussion of cumulative impacts that could result from the Proposed RMP when added to other past, present, and reasonably foreseeable actions. The Proposed RMP would be considered by the BLM to be the environmentally preferable alternative when taking into consideration the human (social and economic) environment as well as the natural environment. The Proposed RMP attempts to balance protection and conservation of physical, biological, and cultural resources, while providing for commodity production and mineral extraction.

CONSULTATION

During the planning process, BLM coordinated with the State Historic Preservation Officer (SHPO), United States Fish Wildlife Service (USFWS), Native American tribes, cooperating agencies, and the public.

- **Consultation with State of Utah SHPO:** Section 106 of the National Historic Preservation Act (NHPA) mandates a review process for all federally funded projects that will impact sites listed on, or eligible to be listed on, the National Register of Historic Places (NRHP).
- **Consultation with USFWS:** The Endangered Species Act (ESA) directs all federal agencies to work to conserve endangered and threatened species and to use their authorities to further the purposes of the ESA. Section 7 of the ESA, called "Interagency Cooperation," is the mechanism by which federal agencies ensure that the actions they take, including those they fund or authorize, do not jeopardize the existence of any listed species.
- **Coordination with Native American Tribes:** BLM is required by law to coordinate with Native American tribes in developing RMPs, to be consistent with tribal plans and protection of treaty rights, and to observe specific planning coordination authorities. In developing the Richfield RMP, BLM representatives met with representatives of the Hopi, Navajo, Paiute, and Ute Tribes.
- **Coordination with Cooperating Agencies:** In preparing the Richfield DRMP/DEIS and PRMP/FEIS, BLM invited other federal agencies and state and local governments to participate as cooperating agencies. The State of Utah and Garfield, Piute, Sevier, and Wayne counties each signed cooperating agency agreements and participated as members of the interdisciplinary team. Other federal agencies, including the United States Forest Service (USFS), National Park Service (NPS), and USFWS, also participated in the interdisciplinary team meetings.
- **Other Consultation:** The field manager, land use planner, and other staff communicated regularly with a variety of groups and individuals that were interested in the RMP. Such communication will continue through the Record of Decision (ROD) and plan implementation.

FUTURE ACTIONS, PROTEST PERIOD, RECORD OF DECISION, AND IMPLEMENTATION

The BLM posted the NOA in the *Federal Register* on August 8, 2008. The NOA formally begins the 30-day protest period, scheduled to end September 8, 2008. The BLM Planning Regulations set forth the provisions applicable to protests (43 *Code of Federal Regulations* [CFR] 1610.5-2). A person who meets the conditions as described in the regulations cited above and who wishes to file a protest must file said protest within 30 days of the date that the NOA is published in the *Federal Register.* Additional information on protests is set forth in the "Dear Reader" letter of the Richfield PRMP/FEIS. The Record of Decision (ROD) will be the decision document for the approved plan. The ROD will state the decision on the RMP, will state the reasons for the decision, will identify all alternatives, and will state compliance with applicable laws. The Approved RMP will provide overarching guidance for all subsequent site-specific decisions and implementation and activity plans within the RFO. Many LUP decisions are implemented or become effective upon publication of the ROD for the Approved RMP and may include desired conditions, land use allocations (allowable uses), or designations and special designations. These designations include the following:

- VRM class designations
- OHV area designations
- Areas closed and open to oil and gas leasing and the stipulations applied to leases within the open areas

- WSR suitability recommendations
- ACEC designations
- ROW avoidance/exclusion

CHAPTER 1—INTRODUCTION, PURPOSE AND NEED

1.1 INTRODUCTION

In accordance with the Federal Land Policy and Management Act of 1976 (FLPMA), the Bureau of Land Management (BLM) is responsible for management of public lands and its resources, based on the principles of multiple use and sustained yield. Land Use Plans (LUP) provide management direction, determine appropriate multiple uses, allocate resources, develop strategies to manage and protect resources, and establish systems to monitor and evaluate the status of resources and effectiveness of management. LUPs are intended to guide management, allowing continuing uses of public land over extended time periods.

The Richfield Proposed Resource Management Plan/Final Environmental Impact Statement (PRMP/FEIS) identifies the Proposed RMP, which has been selected out of the range of alternatives in the Draft Resource Management Plan/Draft Environmental Impact Statement (DRMP/DEIS) for the future management of public land and resources in the Richfield Field Office (RFO). The Proposed RMP was crafted primarily from the Preferred Alternative presented in the DRMP/DEIS (Alternative B) and includes other decisions within the range of alternatives (Alternatives N, A, C, and D) in response to public comments and internal review. The PRMP/FEIS includes a new analysis (presented in Chapter 4) to describe the environmental impacts of implementing the Proposed RMP. The BLM has removed the DRMP/DEIS Alternative B (the Preferred Alternative) from the PRMP/FEIS. The other four alternatives analyzed in the DRMP/DEIS are carried forward for comparative purposes and to correct minor errors that were pointed out by the public and during internal review.

This PRMP/FEIS addresses the future management of 2.1 million surface and mineral estate acres of public land and an additional 95,000 acres of federal mineral estate (underlying private or state surface) in Sanpete, Sevier, Piute, and Wayne counties, as well as portions of Garfield County. There are also 21,500 acres of Kane County within the planning area. However, these acres lie entirely within Glen Canyon National Recreation Area [NRA], which is managed by the National Park Service [NPS], so no decisions within this PRMP/FEIS will affect those lands. This PRMP/FEIS was prepared in cooperation with the five affected county governments, the State of Utah, several Native American tribes, and other federal agencies.

1.2 PURPOSE AND NEED

Council on Environmental Quality (CEQ) regulations (40 *Code of Federal Regulations* [CFR] 1502.13) require the purpose and need of an environmental impact statement (EIS) to "briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives." The purpose and need section of this PRMP/FEIS provides a context and framework for establishing and evaluating the reasonable range of alternatives that are described in Chapter 2.

1.2.1 Purpose

Section 102 of FLPMA sets forth the policy for periodically projecting the present and future use of public lands and their resources, using the land use planning process. Sections 201 and 202 of FLPMA establish the BLM's land use planning requirements. The BLM *Land Use Planning Handbook* (H-1601-1) provides guidance for implementing the BLM land use planning requirements that are established by Sections 201 and 202 of FLPMA and by the regulations in 43 CFR 1600.

The purpose, or goal, of the LUP is to provide a comprehensive framework for the BLM's management of the public lands within the planning area and to ensure that these public lands are managed in accordance with FLPMA and with the principles of multiple use and sustained yield. The purpose of this plan revision is to consolidate the existing LUPs and their amendments; to reevaluate, with public involvement, existing conditions, resources, and uses; and to reconsider the mix of resource allocations and management decisions that are designed to balance uses with the protection of resources, pursuant to FLPMA and other applicable law. This RMP revision will address the growing needs of the planning area and result in selection of a management strategy that best achieves a combination of the following:

- Employ a community-based planning approach to collaborate with federal, state, and local cooperating agencies.
- Resolve multiple-use conflicts or issues between resource values and resource uses. The resulting Proposed RMP will establish consolidated guidance and updated goals, objectives, and management actions for the public lands in the RFO. The Proposed RMP will be comprehensive in nature and will address issues that have been identified through agency, interagency, and public scoping efforts.
- Establish goals and objectives (desired outcomes) for management of resources and resource uses within the approximately 2.1 million surface and mineral estate acres and the additional 95,000 acres of federal mineral estate (underlying private or state surface) that are administered by the BLM's RFO, in accordance with the principles of multiple use and sustained yield.
- Identify LUP decisions to guide future land management actions and subsequent site-specific implementation decisions.
- Identify management actions and allowable uses that are anticipated to achieve the established goals and objectives and to reach desired outcomes.
- Provide comprehensive management direction by making land use decisions for all appropriate resources and resource uses that are administered by the RFO.
- Provide for compliance with applicable tribal, federal, and state laws, standards, implementation plans, and BLM policies and regulations.
- Recognize the nation's needs for domestic sources of minerals, food, timber, and fiber, and incorporate requirements of the Energy Policy and Conservation Act (EPCA) Reauthorization of 2000.
- Retain flexibility to adapt to new and emerging issues and opportunities and to provide for adjustments to decisions over time, based on new information and monitoring.
- Strive to be compatible with existing plans and policies of adjacent local, state, tribal, and federal agencies and to be consistent with federal law, regulations, and BLM policy.

1.2.2 Need

The following six LUPs and subsequent amendments currently guide management of the public lands within the planning area. In addition, the following Mineral Leasing Activity Plans, Recreation Management Plans, Habitat Management Plans (HMP), and existing environmental assessments (EA) and EISs currently apply federal policy to resources at a more manageable level than the current situation.

1.2.2.1 Six LUPs and Subsequent Amendments

- *Forest Management Framework Plan (MFP),* approved in 1977
- *Mountain Valley MFP,* approved in 1982
- *Henry Mountain MFP*, approved in 1982
- *Parker Mountain MFP*, approved in 1982
- *Cedar-Beaver-Garfield-Antimony RMP*, approved in 1986
- *San Rafael RMP,* approved in 1991

1.2.2.2 Mineral Leasing Activity Plans

- *Oil and Gas Leasing EA*, 1988
- *Designation of Hydrocarbon Lease Categories*, 1984

1.2.2.3 Recreation Management Plans

- *Henry Mountains Off-Road Vehicle Implementation Plan*
- *Parker Mountain Off-Road Vehicle Implementation Plan*
- *Mountain Valley Off-Road Vehicle Implementation Plan*
- *Forest Planning Unit OHV Implementation Plan*, 1983
- *Cedar-Beaver-Garfield-Antimony OHV Implementation Plan*

1.2.2.4 Habitat Management Plans

- *Parker Mountain HMP*
- *Henry Mountains Desert Bighorn Sheep HMP*
- *Antimony HMP*

1.2.2.5 Existing Environmental Assessments and Impact Statements

- *Utah BLM Statewide Wilderness EIS*, 1990
- *Utah Combined Hydrocarbon Leasing Regional EIS*, 1984
- *Henry Mountains Grazing EIS*, 1983
- *Parker Mountain Grazing EIS*, 1979
- *Mountain Valley Grazing EIS*, 1980
- *United States Forest Service (USFS)/BLM Motorized Events EA*, 2001 (J-050-01-024)

Through a formal evaluation completed in February 2001, the BLM identified the need, or requirement, to revise these six LUPs. Since completion of these LUPs, considerable changes have occurred within the planning area. Heightened public awareness, increased public demand for use of the lands, and increases in conflict between competing resource values and land uses continue to challenge the BLM's management goals and objectives. The RFO is facing a variety of issues that affect local communities, regional and state interests, and the health of the public lands. These emerging issues and changing circumstances resulted in the need to revise the existing plans. Given the nature of the issues that face the RFO and the overlap between federal, tribal, state, and local jurisdictions, the RFO will combine the six existing LUPs into one planning document—the Richfield Proposed RMP.

A number of new issues (such as new federal species listings), higher levels of controversy concerning existing issues, and new (unforeseen) public land uses and concerns have arisen over the years. These issues were not included or were not adequately addressed in the existing plans. These and other selected examples of new data, new and revised policies, and emerging issues and changing circumstances demonstrate the need to revise the existing plans.

1.3 DESCRIPTION OF THE PLANNING AREA

The planning area, located in south-central Utah, includes all of Piute, Sanpete, Sevier, and Wayne counties and portions of Garfield and Kane counties, an area totaling 5.4 million acres (Map 1-1). The BLM administers 2.1 million acres of public land surface and mineral estate, and an additional 95,000 acres of federal minerals estate for which the surface estate is in non-federal (state or private) ownership.

The BLM also has administrative responsibility for 2,082,865 acres of mineral estate for which the surface is managed by other federal agencies (USFS and NPS). On these lands, leasing of federal minerals is subject to management as directed by the surface managing agency, and the decisions of this Proposed RMP will pertain only to the BLM's role in administering the minerals. Proposed RMP decisions apply only to BLM-administered public lands and resources. Table 1-1 summarizes the surface land ownership within the planning area. In this document, the term "planning area" applies to all lands within the five-county area, regardless of surface ownership. It is important to note that the BLM can make decisions that affect only public lands and resources, but it is responsible for collaborative planning with the public and adjacent jurisdictions to consider the impacts of its actions on all resources in the region.

Table 1-1. Land Ownership—Richfield Planning Area

Ownership	Acres	Percentage of Planning Area
Public lands (BLM-administered)	2,128,200	39
National forests	1,476,400	27
National parks and recreation areas	608,500	11
Private	803,600	15
Utah School and Institutional Trust Lands Administration (SITLA)	385,300	7
Other state, county, city, wildlife, park, and outdoor recreation areas	36,700	1
Tribal lands	1,200	<1
Total	**5,439,900**	**100**

1.4 PLANNING PROCESS

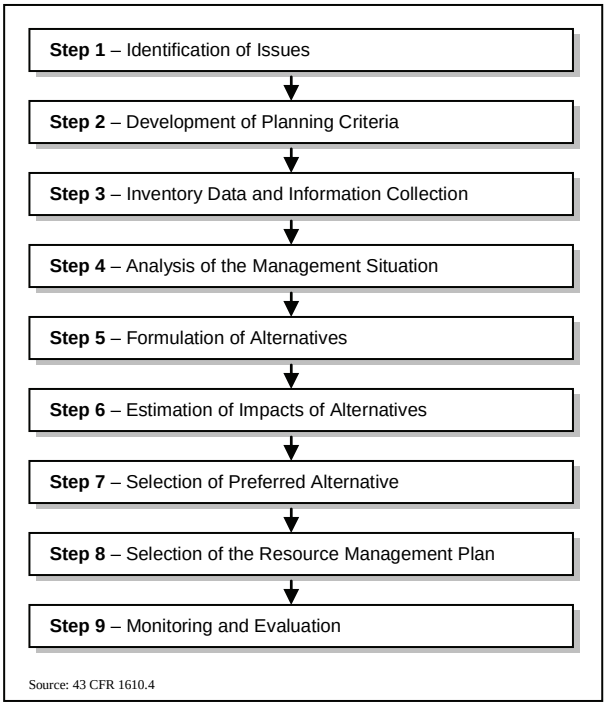
FLPMA requires BLM to use LUPs as tools by which "present and future use is projected" (43 United States Code [U.S.C.] 1701 [a][2]). FLPMA's implementing regulations for planning, 43 CFR 1600, state that LUPs are a preliminary step in the overall process of managing public lands, "designed to guide and control future management actions and the development of subsequent, more detailed and limited scope plans for resources and uses" (43 CFR 1601.0-2). Public participation and input are important components of land use planning.

Revision of existing LUPs is a major federal action for the BLM. The National Environmental Policy Act (NEPA) of 1969, as amended, requires federal agencies to prepare an EIS for major federal actions (United States Department of the Interior [USDI] Departmental Manual, Part 516, Chapter 11.4A[1]); thus, the FEIS accompanies the revision of the existing plans. This PRMP/FEIS analyzes the impacts of five alternative scenarios, including the No Action Alternative, for management of the public lands and resources within the planning area. The No Action Alternative reflects current management (the existing plans). NEPA requires analysis of a No Action Alternative.

The BLM uses a nine-step planning process (Figure 1-1**Error! Reference source not found.**) when developing and revising RMPs, as required by 43 CFR 1600 and by planning program guidance in the

BLM Land Use Planning Handbook (H-1601-1). The planning process is designed to help the BLM identify the uses that the public desires for BLM-administered lands and to consider these uses to the extent that they are consistent with the laws established by Congress and the policies of the executive branch of the Federal Government.

Figure 1-1. Nine-Step Planning Process



The planning process is issue-driven (Step 1). The plan revision process is undertaken to resolve management issues and problems as well as to take advantage of management opportunities. The BLM used the public scoping process to identify planning issues to direct (i.e., drive) the revision of the existing plans. The scoping process was also used to introduce the public to preliminary planning criteria, which set limits to the scope of the RMP revision (Step 2).

As appropriate, the BLM used existing data from a variety of sources and collected new data as necessary to address planning issues and to fill data gaps that were identified during public scoping (Step 3). Using these data, the planning issues, and the planning criteria, the BLM conducted an Analysis of the Management Situation (AMS) (Step 4) to describe current management and to identify management opportunities for addressing the planning issues. Current management reflects management under the existing plans and management that would continue through selection of the No Action Alternative. The existing affected environment section from the AMS is summarized in Chapter 3 of the PRMP/FEIS. The AMS is included as part of the Administrative Record for this plan and is available in the RFO and on the RFO's planning website (www.blm.gov/ut/st/en/fo/richfield/planning.html).

Results of the first four steps of the planning process clarified the purpose and need and identified key planning issues that need to be addressed in the new RMP. Key planning issues reflect the focus of the RMP revision and are described in more detail in the Planning Issues section of this chapter.

Alternatives constitute a range of management actions that are anticipated to achieve identified goals or objectives. During alternative formulation (Step 5), the BLM collaborated with cooperating agencies to identify goals and objectives (desired outcomes) for resources and resource uses in the planning area. These desired outcomes addressed the key planning issues, were constrained by the planning criteria, and incorporated the management opportunities identified by the BLM. Details of the alternatives were developed through the identification of management actions and allowable uses that are anticipated to achieve the goals and objectives. The alternatives represent a reasonable range for managing resources and resource uses within the planning area, under the multiple use and sustained yield mandate of FLPMA. Chapter 2 of this document describes and summarizes the alternatives.

This PRMP/FEIS also includes an analysis of the impacts of each alternative in Chapter 4 (Step 6). With input from cooperating agencies and BLM specialists and in consideration of planning issues, planning criteria, and the impacts of the alternatives, BLM has identified a Proposed RMP from among the five alternatives (Step 7). This Proposed RMP is documented in the PRMP/FEIS, which will be distributed to the public for review and comment (also Step 7).

Step 8 of the land use planning process will occur following receipt and consideration of public comments on the PRMP/FEIS. In preparing the PRMP/FEIS, the BLM considered all comments received during the public comment period. In developing the PRMP/FEIS, the Utah BLM State Director, who is the decision maker for this plan revision, has the authority and discretion to select an alternative in its entirety or to combine components of the various presented alternatives to prioritize differing resources or uses, consistent with the multiple use and sustained yield mandate. The regulations at 43 CFR 1610 provide, prior to the approval of the Proposed RMP, a 60-day period for the Governor of Utah for "consistency review" and a 30-day period to protest the Proposed RMP to the BLM Director for "any person who participated in the planning process and has an interest which is or may be adversely affected by the approval" of the PRMP/FEIS.

Step 9 is the monitoring and evaluation process. Monitoring is the repeated measurement of activities and conditions over time. Evaluation is a process in which the plan and monitoring data are reviewed to see if management goals and objectives are being met and if management direction is sound. Monitoring data gathered over time is examined and used to draw conclusions on whether management actions are meeting stated objectives, and if not, why. Conclusions are then used to make recommendations on whether to continue current management or what changes need to be made in management practices to meet objectives.

The two types of monitoring that are tied to the planning process include implementation and effectiveness monitoring. Land use plan monitoring is the process of (1) tracking the implementation of land use planning decisions and (2) collecting and assessing data/information necessary to evaluate the effectiveness of land use planning decisions. The two types of monitoring are described below.

Implementation Monitoring: Implementation monitoring is the most basic type of monitoring and simply determines whether planned activities have been implemented in the manner prescribed by the plan. Some agencies call this compliance monitoring. This monitoring documents BLM's progress toward full implementation of the land use plan decision. There are no specific thresholds or indicators required for this type of monitoring.

Effectiveness Monitoring: Effectiveness monitoring is aimed at determining if the implementation of activities has achieved the desired goals and objectives. Effectiveness monitoring asks the question: Was the specified activity successful in achieving the objective? This requires knowledge of the objectives established in the RMP as well as indicators that can be measured. Indicators are established by technical

specialists in order to address specific questions, and thus avoid collection of unnecessary data. Success is measured against the benchmark of achieving desired conditions established by the plan.

Regulations at 43 CFR 1610.4-9 require that the Proposed RMP establish intervals and standards, as appropriate, for monitoring and evaluation of the plan, based on the sensitivity of the resource decisions involved. Progress in meeting the plan objectives and adherence to the management framework established by the plan is reviewed periodically. CEQ regulations implementing NEPA state that agencies may provide for monitoring to assure that their decisions are carried out and should do so in important cases (40 CFR 1505.2(c)). To meet these requirements, the BLM will review the plan on a regular schedule in order to provide consistent tracking of accomplishments and provide information that can be used to develop annual budget requests to continue implementation.

Land use plan evaluations will be used by BLM to determine if the decisions in the RMP, supported by the accompanying NEPA analysis, are still valid. Evaluation of the RMP will generally be conducted every five years per BLM policy, unless unexpected actions, new information, or significant changes in other plans, legislation, or litigation triggers an evaluation. Land use plan evaluations determine if decisions are being implemented, whether mitigation measures are satisfactory, whether there are significant changes in the related plans of other entities, whether there is new data of significance to the plan, and if decisions should be changed through amendment or revision. Evaluations will follow the protocols established by the BLM Land Use Planning Handbook H-1601-1 in effect at the time the evaluation is initiated. Specific monitoring and evaluation needs are identified by resource/uses throughout Chapter 2.

1.5 DECISION FRAMEWORK

As stated in the previous section, identifying the planning issues and developing planning criteria are the first steps in defining the scope of the RMP revision. The planning issues and criteria provide the framework in which planning decisions are made. Planning decisions refer to what is established or determined by the Approved RMP. The Approved RMP provides guidance for planning decisions according to the following categories:

- Physical, biological, and cultural resources
- Resource uses
- Special designations

In the context of these categories, management strategies were developed to provide viable options for addressing planning issues. The management strategies provide the building blocks from which general management scenarios and more-detailed resource management alternatives were developed. The resource management alternatives reflect a reasonable range of management options that fall within limits set by the planning criteria. The planning issues and planning criteria used to revise the existing plans are described in the following sections.

1.5.1 Planning Issues

The BLM conducted an early and open scoping process to determine the scope, or range, of issues to be addressed in this PRMP/FEIS. Scoping identifies the affected public and agency concerns, defines the relevant issues and alternatives that will be examined in detail in the RMP/EIS, and eliminates those that are not significant. The BLM *Land Use Planning Handbook* (H-1601-1), defines planning issues as "…disputes or controversies about existing and potential land and resource allocations, levels of resource use, production, and related management practices."

Public scoping was designed to meet the public involvement requirements of FLPMA and NEPA. This cooperative process included soliciting input from interested state and local governments, tribal governments, other federal agencies and organizations, and individuals, to identify the scope of issues to be addressed in the plan and to assist in the formulation of reasonable alternatives. The scoping process was an excellent method for opening dialogue between the BLM and the general public about management of the public lands and for identifying the concerns of those who have an interest in the area.

As part of the scoping process, the BLM also requested that the public submit nominations for potential areas of critical environmental concern (ACEC) and nominations of rivers for potential inclusion in the National Wild and Scenic Rivers System (NWSRS).

The scoping period for the Richfield RMP began on November 1, 2001, with publication of the Notice of Intent (NOI) in the *Federal Register*, and ended on April 1, 2002. Scoping included open-house meetings in five Utah communities (Richfield, Junction, Manti, Loa, and Salt Lake City). In addition, news releases were used to notify the public regarding the scoping period and the planning process and to invite the public to provide written comments. The RFO received written comments via e-mail, fax, and postal mail. Comments obtained from the public during the scoping period were used to define the relevant issues that would be addressed by a reasonable range of alternatives.

For the Richfield planning process, scoping comments received were placed in one of three categories:

- Issues to be resolved in the PRMP/FEIS
- Issues to be addressed through other policy or administrative action (and therefore not addressed in the PRMP/FEIS)
- Issues to be eliminated from detailed analysis because they are beyond the scope of the PRMP/FEIS

During the scoping process, the public and various agencies identified some important issues to be addressed in the RMP. The *Richfield RMP/EIS Scoping Report* (available for review on the RMP planning webpage at www.blm.gov/ut/st/en/fo/richfield/planning.html) summarizes the scoping process. The issues that were identified in the Scoping Report fall into 1 of 12 broad categories. Other resource and use issues are identified in the BLM *Land Use Planning Handbook* H-1601-1. All these issues were considered in developing the alternatives brought forward in this PRMP/FEIS.

1.5.1.1 Issues to Be Addressed in the Richfield RMP

Those planning issues that were determined to be within the scope of the EIS were used to develop one or more of the alternatives or are addressed in other parts of the EIS. For example, as planning issues were refined, the BLM collaborated with cooperating agencies to develop a reasonable range of alternatives designed to address or resolve key planning issues, such as which areas, if any, contain unique or sensitive resources that require special management. A reasonable range of alternatives provides various scenarios for how the BLM and cooperating agencies can address this and other key planning issues, including the management of resources and resource uses in the planning area. In other words, key planning issues serve as the rationale for alternative development. The key planning issues identified for developing alternatives in this FEIS are as follows:

Issue 1: Where and to what extent can transportation and access be managed to satisfy public demand while protecting natural and cultural resource values?

Use (for recreation, commercial uses, and general enjoyment) of the public lands in southern Utah has grown in popularity in recent years. With this popularity has come a demand for greater variety and

availability of access opportunities, including off-highway vehicle (OHV) use. With the number of visitors growing, resource and user conflicts are becoming more common. OHV use needs to be managed, including identifying areas to be restricted or closed for the protection of other resource values.

***Issue 2:* Which areas should be designated for special management (e.g., ACECs and Wild and Scenic Rivers [WSR]), and how should these areas be managed?**

FLPMA and BLM policy require the BLM to give priority to designation and protection of ACECs during the land use planning process. The Wild and Scenic River Act directs federal agencies to consider the potential for including watercourses into the NWSRS during the land use planning process. The alternatives analyzed in this PRMP/FEIS include a range of management prescriptions for managing potential ACECs, as well as for managing the eligible rivers as suitable WSRs.

***Issue 3:* How should non-wilderness study area (WSA) lands with wilderness characteristics be managed?**

The RFO includes lands that are outside designated WSAs but that contain the wilderness characteristics of naturalness, outstanding opportunities for solitude, and outstanding opportunities for primitive or unconfined recreation. The PRMP/FEIS analyzes alternative decisions and levels of protection for non-WSA lands with wilderness characteristics to protect, preserve, and maintain their wilderness characteristics.

***Issue 4:* How should recreation activities be managed to satisfy public demand while protecting natural and cultural resource values?**

Recreation in southern Utah has grown in popularity in recent years. With this popularity has come a demand for a greater variety and availability of recreation opportunities such as motorized and non-motorized trails (including equestrian trails), climbing, mountain biking, hiking, and camping. With the number of visitors growing, resource and user conflicts are becoming more common. Recreational use needs to be managed, including identifying special recreation management areas (SRMA) in which management attention is needed to highlight important recreational opportunities or to deal with problems such as conflicts between users or impacts on other resources.

***Issue 5:* Which areas will be available for mineral development, and which restrictions should be imposed?**

Mineral development is considered a major issue for the planning area, not only for economic reasons but also for the degree to which it can potentially affect other resources (including soils, vegetation, water quality, wildlife habitat and naturalness, solitude, and opportunities for primitive or unconfined recreation). Throughout this PRMP/FEIS, energy and mineral development are analyzed in the context of the need for protection of other resources. BLM has management discretion in four areas, and the alternatives include a range of options for each:

- Areas closed or open to oil and gas leasing and the stipulations on leasing within the open areas
- Areas closed or open to disposal of salable minerals (mineral materials)
- Areas proposed for withdrawal from entry under the mining laws
- Areas available for further consideration for coal leasing (coal unsuitability)

***Issue 6:* Which areas will be available for livestock grazing, in light of resource conflicts?**

The Secretary of the Interior, through the BLM, manages approximately 264 million acres of public rangelands throughout the western United States. The Taylor Grazing Act of 1934, FLPMA, and the Public Rangelands Improvement Act of 1978 together guide the BLM's management of livestock grazing on public lands. The objectives for grazing administration regulations are to "promote healthy sustainable rangeland ecosystems; accelerate restoration and improvement of public rangelands to properly functioning condition; efficiently and effectively administer domestic livestock grazing; and provide for the sustainability of the Western livestock industry and communities that are dependent upon productive, healthy public rangelands" (43 CFR § 4100.0–2).

This PRMP/FEIS will review and update the status of lands available or unavailable for livestock grazing, as referred to in 43 CFR 4130.2. When rangeland health assessment, monitoring data, inventory data, or other inputs indicate that changes are needed for resource improvement, these changes will be pursued at the implementation level on a site-specific basis, in accordance with BLM *Land Use Planning Handbook* (H-1601-1).

Issue 7: How can resources such as vegetation, soils, and wildlife be protected, maintained, or restored?

Some resource uses (e.g., grazing, mineral development, OHV use, recreation) can affect the natural function and condition of plant communities that provide habitat for wildlife. A healthy cover of perennial vegetation stabilizes the soil, increases infiltration of precipitation, reduces runoff, provides clean water to adjacent streams, and minimizes noxious weed invasion. Healthy plant communities provide habitat for a variety of wildlife species, including special status species (SSS).

The alternatives address wildlife and wildlife habitat in terms of the interactions of other resources and resource uses (such as oil and gas leasing, OHV area and route designations, and development of rights-of-way [ROW]) with wildlife and its habitat.

The management of habitat for plant and animal species that are listed under the Endangered Species Act (ESA), such as the Mexican spotted owl, Wright fishhook cactus, and Utah prairie dog, as well as other species considered sensitive, such as the Greater sage-grouse and the pygmy rabbit, was raised as an issue by the BLM, other federal and state agencies, and the public. In recognition of the importance of these species, the alternatives address them separately from other wildlife species.

Issue 8: Where is fire desired and not desired, and in which areas could fire be used as a management tool for vegetative treatments?

Drought and beetle infestation in southern Utah have contributed to hazardous fuel loading, increasing the threat of wildfires. Areas of pinyon die-off and dry grasslands have also created areas of higher risk for fire hazard and could require treatment. A fire management plan is to be developed to address high-risk areas, fire prevention, prescribed burns, rehabilitation and restoration, hazardous fuels reduction, and the protection of life and property.

Issue 9: Which lands within the planning area should be identified as targets for acquisition, disposal, or withdrawal?

As mandated by Section 102 (a)(1) of FLPMA (43 U.S.C. § 1701), public lands are retained in federal ownership, the exception being those public lands that have future potential for disposal (e.g., sale or exchange), as described under Section 203(a) and Section 206 of FLPMA (43 U.S.C. §§ 1713 and 1716).

Public lands cannot be effectively administered without legal and physical access. Therefore, public lands have potential for disposal when they are isolated or difficult to manage. Lands that are identified for disposal must meet public objectives, such as community expansion and economic development. Disposals would be accomplished by using a variety of methods, including land sales, land exchange, and sale or lease under the Recreation and Public Purposes (R&PP) Act of 1926. Public lands can be considered for disposal other than through FLPMA sale, on a case-by-case basis. Disposal actions are usually in response to a public request or application and result in a title transfer, wherein the lands leave the public domain. In addition, the BLM will consider acquisition of non-federal lands that meet resource management objectives, through negotiated purchase, donation, or exchange from willing sellers. In a withdrawal of lands, an area of public land is withheld from settlement, sale, location, or entry, for the purpose of limiting activities to maintain other public values.

Although the PRMP/FEIS does not include specific decisions on social and economic factors, the impacts of the management actions contained within the alternatives are analyzed for their impacts on socioeconomic conditions. Social and economic factors are identified in Chapter 3 (Affected Environment) and analyzed in Chapter 4 (Environmental Consequences). Other issues related to resources and resource uses are required to be considered during land use planning efforts, in accordance with BLM *Land Use Planning Handbook* (H-1610-1) and NEPA regulations and policy. These include decisions for soil and water, management of ROWs, environmental justice, and air quality.

1.5.1.2 Issues Considered But Not Further Analyzed

Issues Addressed Through Policy or Administrative Action

Policy or administrative actions include those actions that are implemented by the BLM because they are standard operating procedure, because federal law requires them, or because they are BLM policy. Administrative actions do not require a planning decision to implement. Issues that can be addressed by policy or administrative actions are eliminated from detailed analysis in this planning effort. Such issues include the following:

- Compliance with existing laws and policies (e.g., FLPMA, NEPA, ESA, American Antiquities Act, Clean Air Act of 1970 [CAA], Clean Water Act of 1977 [CWA], National Historic Preservation Act [NHPA]).
- The allocation of forage between livestock and wildlife and the application of specific management practices on allotments within the RFO, as provided for through the application of Utah's *Standards for Rangeland Health, Guidelines for Livestock Grazing Management*, and supporting monitoring data. When monitoring and inventory data indicate a need, changes to the allocation of forage for livestock and wildlife are made after coordination with permittees, the Utah Division of Wildlife Resources (UDWR), and other affected interests to ensure that resource objectives are met. Livestock grazing management practices may also be adjusted to ensure that grazing practices are compatible with other uses of the public lands. These allocation and management adjustments are implementation decisions according to the BLM *Land Use Planning Handbook* (H-1601-1) and are made on an allotment or other site-specific basis.
- Education, enforcement and prosecution, vandalism, and volunteer coordination.
- Assistance in resolving, to the extent possible, inconsistencies between federal and non-federal agency plans, and in establishing consistency with state and local plans to the maximum extent, consistent with federal law and the purposes of FLPMA.
- Management of cultural resources, including up-to-date inventories, non-disclosure of sensitive sites, proposal of cultural sites for the National Register of Historic Places (NRHP), and Native American consultation.

- Management of the RFO's 11 existing WSAs (approximately 446,900 acres) under the *Interim Management Policy (IMP) for Lands Under Wilderness Review* (BLM Handbook H-8550-1). The BLM is statutorily (FLPMA Section 603[c]) required to manage these areas to protect their suitability for congressional designation for the National Wilderness Preservation System unless and until Congress either designates an area as wilderness or releases it from further consideration. The BLM's discretion to make planning decisions about management of WSAs is limited to designating WSAs as visual resource management (VRM) Class I and to determining whether the WSAs will be limited or closed to OHV use.
- Completion of inventory of riparian and wetland areas and the use of monitoring and mitigation to help protect these resources.
- Recreation management improvements, including a comprehensive sign system and maps.
- Administration of existing mineral leases, permits, and other authorized uses.
- Administration of valid existing rights.
- Monitoring wildlife and biodiversity.
- Monitoring air quality.
- Mitigation measures for site-specific projects.
- Noxious weed control.
- Eligibility standards for specially designated areas.
- Protection of threatened, endangered, or sensitive species.
- Coordination with local, state, and federal agencies.
- Cooperation with user groups.

Issues Beyond the Scope of the RMP

Issues beyond the scope of the RMP process include all issues that are not related to decisions that would occur as a result of the planning process. Such decisions include those that are not under the jurisdiction of the RFO or are beyond the capability of the BLM to resolve as part of the planning process. Issues identified in this category include the following:

- The State of Utah and Garfield, Piute, Sanpete, Sevier, and Wayne counties may hold valid existing ROWs in the planning area, pursuant to Revised Statute (RS) 2477, Act of July 28 1866, Chapter 262, 8, 14 Stat. 252, 253, codified at 43 U.S.C. 932. On October 21, 1976, Congress repealed RS 2477 through passage of FLPMA. This RMP does not adjudicate, analyze, or otherwise determine the validity of claimed ROWs. However, nothing in the RMP extinguishes any valid ROW, or alters in any way the legal rights that the state and counties have to assert and protect RS 2477 rights or to challenge in federal court or other appropriate venue any RMP-imposed use restrictions that they believe are inconsistent with their rights.
- New proposals for WSAs or wilderness.
- Activities and uses beyond the jurisdiction of the BLM.
- Changing of existing laws, policies, and regulations.
- Availability of funding and personnel for managing programs.

1.5.2 Planning Criteria

BLM planning regulations (43 CFR 1610) require the preparation of planning criteria preliminary to the development of all RMPs. Planning criteria are the standards, rules, and guidelines that help to guide the planning process. These criteria influence all aspects of the planning process, including inventory and data collection, developing issues to address, formulating alternatives, estimating impacts, and selecting the Proposed RMP. In conjunction with the planning issues, planning criteria ensure that the planning process is focused and incorporates appropriate analyses. Planning criteria are developed from

appropriate laws, regulations, and policies as well as from public participation and coordination with cooperating agencies, other federal agencies, state and local governments, and Native American tribes.

Planning criteria used in the development of this RMP are as follows:

- The RMP will recognize the existence of valid existing rights.
- The RMP will comply with applicable laws, regulations, executive orders, and BLM supplemental program guidance.
- Planning decisions will cover BLM-administered public lands, including split-estate lands for which the Federal Government has retained the sub-surface mineral estate.
- Planning decisions will use and observe the principles of multiple use and sustained yield that are set forth in FLPMA and other applicable law (43 U.S.C. 1701 [c][1]).
- The BLM will use a systematic interdisciplinary approach to achieve integrated consideration of physical, biological, economic, and other sciences (43 U.S.C. 1701 [c][2]).
- Areas potentially suitable for ACEC or other special designations will be identified and, where appropriate, brought forward for analysis in the EIS (43 U.S.C. 1701 [c][3]).
- The BLM will rely on, to the extent it is available, the inventory of public lands, their resources, and other values (43 U.S.C. 1701 [c][4]).
- The BLM will consider present and potential uses of the public lands (43 U.S.C. 1701 [c][5]).
- The BLM will consider the relative scarcity of the values involved and the availability of alternative means (including recycling) and sites for the realization of those values (43 U.S.C. 1701 [c][6]).
- The BLM will consider the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity.
- Decisions in the RMP will comply with applicable pollution control laws, including state and federal air, water, noise, or other pollution standards or implementation plans (43 U.S.C. 1701 [c] [8]).
- To the extent consistent with the laws governing the administration of the public lands (FLPMA 202 b[9]), BLM will be consistent with existing officially adopted and approved resource-related plans, policies, or programs of other federal agencies, state agencies, Native American tribes, and local governments that may be affected (43 CFR 1610.3-1 [c][9]).

1.6 CHANGES FROM THE DRAFT RMP TO THE PROPOSED RMP

Review of and comments on the DRMP/DEIS have resulted in several changes to that document. Changes were in response to a combination of public comments, meetings with cooperating agencies, and changes in BLM policy and management direction. None of the changes described here and further detailed in Appendix 20 meet the regulatory definition for significance in 40 CFR 1508.27(a) and (b) because these changes resulted in minor modifications to what was considered in the DRMP/DEIS and would not greatly affect the impacts analysis. These regulations require an agency preparing a NEPA document to review the changes for significant new circumstances or information relevant to environmental concerns and bearing on the Proposed RMP or its impacts, using context and intensity as the trigger for significance. The BLM has reviewed each change according to this regulatory standard and has determined that none of the changes, individually or collectively, require a supplement to this PRMP/FEIS. The DRMP/DEIS Preferred Alternative (Alternative B) has been revised and renamed the Proposed RMP.

The BLM has made numerous changes between the DRMP/DEIS and PRMP/FEIS. These changes are described in this section and detailed in Appendix 20. The BLM has prepared Appendix 20 to document whether changes between the DRMP/DEIS and the PRMP/FEIS resulted in a significant change in

circumstances or conditions or whether the PRMP/FEIS contains updated information from that which was presented to the public in the DRMP/DEIS. Finally, the BLM wanted to confirm that all changes made to the PRMP/FEIS fall within the range of alternatives that were presented and analyzed in the DRMP/DEIS. If changes that were made to the PRMP/FEIS are outside the range of alternatives that were analyzed in the DRMP/DEIS, this section and Appendix 20 provide an explanation for the need to make the change and the determination of whether the change is or is not significant.

The regulation controlling whether or not a supplement is required is found at 40 CFR 1502.9(c), which provides that agencies:

(1) Shall prepare supplements to either draft or final environmental impact statements if:
   (i) The agency makes substantial changes in the proposed action that are relevant to environmental concerns; or
   (ii) There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impact (as defined by NEPA in 40 CFR 1508.27).
(2) May also prepare supplements when the agency determines that the purposes of the Act will be furthered by doing so.

All changes to the RFO DRMP/DEIS were made in response to public comment and internal review. The majority of the changes were editorial changes made to add clarity to the document. In some cases, alternatives presented in the DRMP/DEIS were modified in the PRMP/FEIS to reflect technical corrections and data updates. In other cases, such as in Chapter 3, incorporation of updated information was necessary to refine the analysis in Chapter 4, which was incomplete or needed augmentation.

1.6.1 Summary of Changes To Decisions Between the Preferred Alternative (Draft EIS) and the Proposed RMP (Final EIS)

The following list identifies some of the specific differences between the Preferred Alternative of the DRMP/DEIS and the Proposed RMP:

- **Air Quality.** Air quality emissions calculations were completed for each alternative.
- **Fish and Wildlife.** Wildlife habitat maps were changed to reflect the most current UDWR data.
- **Livestock Grazing.** Temporary non-renewable use of grazing was added to reduce site-specific fuels (i.e., cheat grass).
- **Non-WSA Lands with Wilderness Characteristics.** Management prescriptions for 12 non-WSA lands with wilderness characteristics areas (78,600 acres) were added to the Proposed RMP to protect, preserve, and maintain their wilderness characteristics.
- **Recreation.**
  - Under the Proposed RMP, the size of the Factory Butte SRMA was increased to 24,400 acres and the size of the Big Rocks SRMA was decreased to 90 acres.
  - Established three RMZs in the Factory Butte SRMA including the OHV Open Play Area RMZ (8,500 acres), the Motorized Touring RMZ (11,300 acres) and the Landmarks RMZ (4,600 acres).
- **Travel Management.**
  - The boundary of the Factory Butte Play Area was adjusted to designate OHV play areas while avoiding sensitive plant species.
  - The size of the Big Rocks Trails Area and the Glenwood Play Area were decreased.
  - The Mayfield Open Area was eliminated from the Proposed RMP.
  - Increased the miles of designated routes by 46 miles.

  - Increased the miles of designated routes with seasonal closures or size/width restrictions by 55 miles.
  - Increased the miles of closed routes by 141 miles.
- **WSRs.** The Fremont River in the Fremont River Gorge would be managed as suitable for inclusion in the NWSRS with a tentative classification of "wild". The Dirty Devil segment was not carried forward as a suitable river for inclusion in the NWSRS.

1.6.2 Summary of Changes Made Between the DRMP/DEIS and the PRMP/FEIS

1.6.2.1 Chapter 1

The following changes were made to Chapter 1, based on public comment and BLM review:

- Revised the language regarding RS 2477.
- Revised the language regarding tar sands, based on the *Programmatic Environmental Impact Statement on Oil Shale and Tar Sands Leasing*.
- Added a section to describe the changes from the DRMP/DEIS to the PRMP/FEIS.
- Revised the PRMP/FEIS based on the UDWR wildlife habitat maps.

1.6.2.2 Chapter 2

The following clarifications/modifications were made to Chapter 2:

- Italicized and added an asterisk and footnote to identify implementation-level decisions.
- Added the Air Quality common to all management actions, based on discussions with the State of Utah.
- Revised the SSS management actions to allow no surface disturbing or otherwise disruptive activities within 2 miles of a greater sage-grouse lek from March 15 to July 15 to protect sage grouse breeding and brood-rearing habitat.
- Revised the SSS management actions to manage oil and gas leasing as open subject to major constraints (NSO) within ½ mile of greater sage-grouse leks.
- Revised the SSS management action to allow no surface disturbing or otherwise disruptive activities in greater sage-grouse winter habitat from December 15 through March 14.
- Added the Minerals and Energy common to all management actions.
- Revised the Lands and Realty management decisions to give land exchanges with the State of Utah priority consideration to resolve inholdings issues.
- Revised the WSA common to all management actions to address ways in WSAs.
- Revised the WSR common to all management actions to work with upstream and downstream water users and applicable agencies to ensure that water flows are maintained at a level sufficient to sustain the values for which affected river segments were designated.
- Revised the Travel management common to all management actions to allow limitations on the types of vehicles that are allowed on specific designated routes (especially off-road travel in an area that is limited to designated routes), if monitoring indicates that a particular type of vehicle is causing disturbance to the soil, wildlife habitat, cultural, or vegetative resources.
- Revised the Transportation common to all management actions to clarify that the State of Utah may be provided reasonable access to state lands for economic purposes per the Cotter decision, on a case-by-case basis.
- Revised the Vegetation common to all management actions to implement noxious weed and invasive species control actions as per national guidance and local weed management plans.

- Revised the Wildlife common to all management actions to allow for maintenance of the land use plan when minor adjustments to crucial wildlife habitat boundaries are periodically made by the UDWR.
- Revised the Wildlife management actions in the Proposed RMP to allow for compensatory mitigation on an "as appropriate" basis when it can be performed onsite, and on a voluntary basis when it is performed offsite, in accordance with current guidance.
- Clarified the wording for the No Leasing Alternative and the Livestock Grazing Adjustments Alternative that were considered but eliminated from detailed analysis.

1.6.2.3 Chapter 3

The following changes were made to Chapter 3, based on public comment and BLM review:

- Clarified that the Cotter decision would apply in providing access to SITLA lands.
- Added language to recognize the importance of climate change and the potential effects it may have on the natural environment.
- Clarified the limitation of the application of the size criteria for non-WSA lands with wilderness characteristics.

1.6.2.4 Chapter 4

The following changes were made to Chapter 4, based on public comment and BLM review:

- Conducted emissions calculations for each of the Alternatives and the Proposed RMP.
- Added cultural language to describe the Section 106 consultation process.
- Revised the non-WSA lands with wilderness characteristics impact analysis to address lands that are carried forward in the Proposed RMP and those lands that are not carried forward in the Proposed RMP.
- Revised the ACEC section to clarify other resource decisions that provide protection to relevant and important values of potential ACECs. In addition, this section was formatted to be consist with other sections in Chapter 4.
- Revised the cumulative impact analysis section to clarify incremental effects from past, present and future actions.
- Moved the sage grouse impact analysis from the fish and wildlife section to the special status species section.
- Revised the sage grouse impact analysis to address the management action changes described in chapter 2.
- Added to the socioeconomic section an impact analysis from non-WSA lands with wilderness characteristics to Utah School and Institutional Trust Lands Administration (SITLA) lands.
- Added language to address global climate change.

1.6.2.5 Maps

The maps were revised based on public comment and BLM review:

- A disclaimer was added to the wildlife habitat maps to provide the UDWR data publication dates and a reference to the exceptions, waivers, and modifications listed in Appendix 11.
- Included sage-grouse winter habitat on map 3-6.
- Maps were updated to reflect changes in the Proposed RMP and to correct errors.

1.6.2.6 Appendices

The following appendices were added or revised, based on public comment and BLM review:

- **Appendix 11.** The BLM has updated and clarified Appendix 11 Oil and Gas Leasing Stipulations for the Proposed RMP, based on comments and internal review. New lease notices for threatened and endangered (T&E) species created by USFWS have been included. The "Other Scenic Lands" no surface occupancy (NSO) stipulation has been replaced with a CSU stipulation for VRM Class 2. Proposals for surface disturbing activities involving construction on slopes greater than 30 percent would be avoided if possible (subject to CSU) to protect fragile soils throughout the planning area. The BLM specified the conditions for waivers and modifications for wildlife habitat. Added a sage grouse seasonal restriction for 2 miles around leks and added a no surface occupancy stipulation of 1/2 miles around sage grouse leks.
- **Appendix 16.** Summary of Management of Non-WSA Lands with Wilderness Characteristics for the Richfield Field Office Proposed RMP/Final EIS
- **Appendix 17.** Utah Public Lands Study: Key Social Survey Findings for Garfield, Piute, Sanpete, Sevier, and Wayne Counties
- **Appendix 18.** Factory Butte SRMA recreation management zones (RMZs) and Management Prescriptions
- **Appendix 19.** Wildland Fire Resource Protection Measures and Reasonable and Prudent Measures, Terms and Conditions, and Reporting Requirements Identified through Section 7 Consultation
- **Appendix 20.** Summary of Changes from the DRMP/DEIS to the PRMP/FEIS
- **Appendix 21.** State of Utah Air Quality Letter

1.7 RELATIONSHIP TO OTHER PROGRAMS, PLANS, AND POLICIES

1.7.1 Other Related Plans

FLPMA requires that the BLM, when developing or revising LUPs, shall abide by the following:

> *…to the extent consistent with the laws governing the administration of the public lands, coordinate the land use inventory, planning, and management of activities of or for such lands with the land use planning and management programs of other Federal departments and agencies and of the States and local governments within which the lands are located…and assure that consideration is given to those State, local and tribal land use plans for public lands [and] assist in resolving, to the extent practical, inconsistencies between Federal and non-Federal Government plans…(43 U.S.C. S 1712 [c][9])*

The BLM must keep apprised of the many ongoing programs, plans, and policies that are being implemented in the planning area by other federal, state, local, and tribal governments. The BLM will seek to be consistent with or complementary to other management actions whenever possible. Plans that need to be considered during the RFO's planning effort are identified in Table 1-2.

Table 1-2. Plans to Be Considered in the Richfield Resource Management Plan

Plan Types	Specific Plans
County Plans	Garfield County General Plan, 1998 General Plan for Piute County, 1994

Plan Types	Specific Plans
	Sanpete County General Plan, 1997 Sevier County General Plan, 1998 General Plan for Wayne County, 1994 Utah Comprehensive Wildlife Conservation Strategy (State Wildlife Action Plan), 2005
State of Utah	Statewide Comprehensive Outdoor Recreation Plan (SCORP), 2000 Utah Water Quality Plan
National Forest Plans	Manti-LaSal National Forest Land and Resource Management Plan Dixie National Forest Land and Resource Management Plan Fishlake National Forest Land and Resource Management Plan Uinta National Forest Land and Resource Management Plan
National Park Service Plans	Capitol Reef National Park General Management Plan, 1988 Glen Canyon National Recreation Area General Management Plan Glen Canyon National Recreation Area Grazing Management Plan Canyonlands National Park General Management Plan Glen Canyon National Recreation Area Minerals Management Plan, 1980
Other BLM Surrounding Offices	Kanab Field Office LUPs - Escalante MFP, Paria MFP, Vermilion MFP, Zion MFP and Cedar-Beaver-Garfield-Antimony RMP Cedar City Field Office LUPs, MFPs - Pinyon Grazing EIS (1982), Cedar-Beaver-Garfield-Antimony RMP grazing decisions (1984), Utah BLM Statewide Wilderness EIS (1990) Fillmore Field Office- House Range Resource Management Plan and Warm Springs Resource Management Plan Grand Staircase Escalante National Monument LUP-Monument Management Plan 1999 Price Field Office LUPs-the Price River Resource Area Management Framework Plan and the San Rafael Resource Management Plan Salt Lake Field Office LUPs- Randolph MFP (1980), Box Elder RMP (1986), Pony Express RMP (1990), Park City MFP (1975) and Isolated-Tract Planning Analysis Evaluation (1985)
Habitat Plans	Parker Mountain Habitat Management Plan Henry Mountains Desert Bighorn Sheep Habitat Management Plan Antimony Habitat Management Plan
Threatened and Endangered Species Recovery Plans	Maguire Daisy Recovery Plan, 1995 Mexican Spotted Owl Recovery Plan, 1995 Utah Reed-Mustards Recovery Plan, 1994

Plan Types	Specific Plans
	Last Chance Townsendia Recovery Plan, 1993 Northern States Bald Eagle Recovery Plan, 1983 Wright Fishhook Cactus Recovery Plan, 1985 Southwest Willow Flycatcher Recovery Plan, 2001 Utah Prairie Dog Recovery Plan, 1991 Utah Prairie Dog Interim Conservation Strategy, 1997 Central Utah Navajo Sandstone Endemics Conservation Agreement, 2006 Conservation Agreement and Strategy for the Bonneville Cutthroat Trout, 1997 Conservation Agreement for the Colorado River Cutthroat Trout, 2006 Range-Wide Conservation Agreement for Roundtail Chub Gila robusta, Bluehead Sucker Catostomus discobolus, and Flannelmouth Sucker Catostomus latipinnis, 2004 Conservation Strategy and Agreement for the Management of Northern Goshawk Habitat in Utah, 1999
BLM Programmatic Environmental Analyses	Programmatic Environmental Impact Statement on Oil Shale and Tar Sands Leasing West-wide Energy Corridor Programmatic EIS Utah Land Use Plan Amendment for Fire and Fuels Management, 2005 Wind Energy Programmatic Environmental Impact Statement, 2005 Vegetation Treatments on BLM Lands in 17 Western States Programmatic Environmental Report, 2007 Vegetation Treatments Using Herbicides in 17 Western States Programmatic Environmental Impact Statement, 2007 Final Environmental Impact Statement Vegetation Treatment on BLM Lands in Thirteen Western States and associated Records of Decision, 1991

Consistency with national forest plans is ongoing because three of the four national forests that share boundaries with the RFO are revising their LUPs. In developing their respective management plans, the USFS and BLM have coordinated OHV area and route designations, potential WSR evaluations, and other resources of mutual concern.

1.7.2 Energy Policy and Conservation Act

In May 2001, the Bush administration's Comprehensive National Energy Policy was issued. This Policy directed the Secretary of the Interior to do the following:

> *… examine land status and lease stipulation impediments to Federal oil and gas leasing, and review and modify those where opportunities exist (consistent with the law, good environmental practice and balanced use of other resources).*

Under this directive, the Assistant Secretary of the Interior for Land and Minerals Management delivered to Congress an inventory of U.S. oil and gas resources in five western basins, as well as a description of

the extent and nature of any restrictions or impediments to their development. This report was prepared at the request of Congress under the provisions of the 2000 Energy Policy and Conservation Act (EPCA).

In April 2003, the BLM Washington Office (WO) issued an Instruction Memorandum (IM No. 2003-233) which requires the integration of EPCA inventory results in the land use planning process. The IM establishes direction, consistent with FLPMA, to enhance BLM's ability to protect the environment and other resources, as well as facilitates energy development, where appropriate. The IM outlines strategy for integrating the EPCA inventory results into land use plans, restates BLM's commitment to providing responsible and balanced access to the public lands for energy exploration and development; and reinforces BLM's obligation to monitor and adaptively manage public lands and resources.

In August 2005, the Bush administration's national energy plan was issued which encourages energy efficiency and conservation, promotes alternative and renewable energy sources, reduces our dependence on foreign sources of energy, increases domestic production, modernizes the electricity grid, and encourages the expansion of nuclear energy.

1.7.3 Tar Sands and Oil Shale Resources Programmatic EIS

The RFO contains areas of tar sands resources. These resources have been and are available for lease under the Combined Hydrocarbon Leasing Act of 1981 and in accordance with the decisions in the existing BLM LUPs.

The major tar sand resources lay only in Utah, within 11 designated Special Tar Sands Areas (STSA) managed by the BLM's Vernal, Price, Richfield, and Monticello Field Offices (FO). The RFO manages one of these STSAs. One of these STSAs lies within the Grand Staircase-Escalante National Monument where leasing is prohibited.

When the Richfield RMP was initiated in 2001, there was no reasonably foreseeable development expectation for tar sands over the life of the plan. The mineral report identified these resources but did not foresee any leasing or development because of prevailing and anticipated economic factors.

Since the start of this RMP revision, Congress has enacted the Energy Policy Act of 2005. Section 369 of the Energy Policy Act requires the Secretary of the Interior to "complete a programmatic environmental impact statement for a commercial leasing program for oil shale and tar sands resources on public lands, with an emphasis on the most geologically prospective lands within each of the States of Colorado, Utah, and Wyoming." On December 13, 2005, the BLM published an NOI in the *Federal Register,* initiating a Programmatic Environmental Impact Statement (PEIS) to support a commercial oil shale and tar sands leasing program on federal lands in those three states. Since that time, the scope of the PEIS has been revised. The BLM is no longer using the PEIS as the document that supports the NEPA requirements for leasing. Given that the development technologies for in-situ production of oil shale are just emerging, there is a lack of information regarding resource use and associated impacts. Consequently, the BLM has changed this document to a resource allocation document that identifies the BLM-managed lands for which applications to lease oil shale and tar sands resources would be accepted in the future. However, although applications would be accepted, additional NEPA analysis would be performed before any leasing of the area would be considered.

All decisions related to land use planning decisions (i.e., regarding areas open to application for potential leasing) for tar sands resources in this RMP will be made in accordance with the ongoing PEIS for Oil Shale and Tar Sands Resources. The ROD on the Final PEIS will amend the PRMP/FEIS by making land use planning decisions based on whether or not lands will be available for future application, leasing, and

development of tar sands on public lands for those areas where the resource is present. Additional site-specific NEPA analysis would be completed on each lease application before any leases would be issued.

As part of the site-specific NEPA analysis, the environmental consequences of specific resource values and uses within the areas and any alternative actions would be analyzed. Any decision to offer the lands for lease would be based on a full disclosure of the impacts. If a decision were made to offer the lands for lease, specific mitigation measures would be developed to ensure that the commercial operations use practices that minimize or mitigate impacts.

This pre-leasing NEPA analysis would include the same opportunities for public involvement and comment that are part of this PEIS process and every other land use planning and NEPA process that the BLM undertakes. The decisions associated with the PEIS will be incorporated into the RFO RMP as it is finalized, or the RFO RMP will be amended. Additional opportunities for public involvement and comment will occur when the Proposed RMP Amendment/Final PEIS is available.

However, this RMP will develop allocation decisions for conventional oil and gas leasing and the Combined Hydrocarbon Leases (CHL) in the STSAs.

1.7.4 West-wide Energy Corridor Programmatic EIS

Section 368 of the Energy Policy Act of 2005 (designation of west-wide energy corridors) is being implemented through the current development of an interagency PEIS. The PEIS will address numerous energy corridor–related issues, including the utilization of existing corridors (i.e., enhancements and upgrades), identification of new corridors, supply and demand considerations, and compatibility with other corridor and project planning efforts. It is likely that the identification of corridors in the PEIS will affect the RFO, and the decisions in the Approved PEIS will be carried forward into the Approved RMP, or, depending on timing, the PEIS will amend the RFO RMP.

1.7.5 Utah Land Use Plan Amendment for Fire and Fuels Management

The decisions that were reached through the *Utah Land Use Plan Amendment for Fire and Fuels Management* process, approved in September 2005, are common to all alternatives, and the analysis is incorporated by reference. The fire plan amendment does the following:

- Establishes landscape-level fire management goals and objectives
- Describes desired wildland fire conditions (DWFC) by Fire Regime Condition Class (FRCC) and describes the management strategies and actions to meet DWFC and land use allocations
- Describes areas in which fire may be restored to the ecosystem through wildland fire use for resource benefit and areas in which wildland fire use is not appropriate
- Identifies criteria that would be used for establishing fire management priorities
- Identifies maximum burned areas and treatment acres for wildfire, wildland fire use for resource benefit, prescribed fire treatments, non-fire fuel treatments, and emergency stabilization and rehabilitation (ESR) actions

1.7.6 Wind Energy Programmatic EIS

The ROD for the *Wind Energy Development Programmatic Environmental Impact Statement*, which implements a comprehensive wind energy development program to administer the development of wind energy resources on BLM-administered public lands in 11 western states (including Utah), was approved

in December 2005. The decisions that were reached through the Wind Energy Development PEIS process are common to all alternatives in the RFO RMP, and the analysis is incorporated by reference. The decision established policies and best management practices (BMP) for the administration of wind energy development activities and established minimum requirements for mitigation measures.

CHAPTER 2—ALTERNATIVES

2.1 INTRODUCTION

This chapter describes the Proposed RMP that was crafted primarily from the Preferred Alternative in the Draft Resource Management Plan/Draft Environmental Impact Statement (DRMP/DEIS) (Alternative B) as well as from other decisions within the range of alternatives presented in the DRMP/DEIS, including the No Action Alternative N and Alternatives A, C, and D. The No Action Alternative N and Alternatives A, C, and D are repeated from the DRMP/DEIS into the Proposed Resource Management Plan/Final Environmental Impact Statement (PRMP/FEIS) for comparative purposes and to correct minor deficiencies pointed during the DRMP/DEIS public comment period and from internal review. The changes from the Preferred Alternative (Alternative B in the Draft RMP/EIS) to the Proposed RMP have been highlighted gray.

Evaluation of a reasonable range of alternatives is required by National Environmental Policy Act (NEPA) and the Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations [CFR] Part 1502.14), as well as by BLM planning regulations. As required in the CEQ regulations, the reasonable range must include a "no action" alternative (CEQ 1981, Question 3.A), which is the continuation of current management under the *Mountain Valley Management Framework Plan (MFP)* (1982), the *Henry Mountain MFP* (1982), the *Parker Mountain MFP* (1982), the *Cedar-Beaver-Garfield-Antimony Resource Management Plan (RMP)* (1986), the *Forest MFP* (1977), and the *San Rafael RMP* (1991), as well as subsequent plan amendments.

The BLM recognizes that social, economic, and environmental issues cross land ownership lines and that extensive cooperation is needed to actively address issues of mutual concern. To the extent possible, these alternatives were crafted using input from public scoping comments and cooperating agencies.

Once the alternatives were developed, the BLM analyzed them to predict their impacts on the environment. Based on the impacts analysis of these alternatives, along with knowledge of specific issues raised throughout the planning process, input from cooperating agencies and BLM resource specialists, consideration of planning criteria, and potential resolution of resource conflicts, the BLM has identified the Proposed RMP. Each alternative provides a different emphasis for managing public lands and resources within the planning area, and each alternative represents a complete and reasonable RMP that: 1) meets the purpose and need described in Chapter 1; 2) responds to environmental, operational, and economic concerns raised by the public, agencies, business, and other special interest groups during the scoping process; and 3) addresses potential environmental issues identified during review of the proposed management actions.

2.2 ALTERNATIVE COMPONENTS

The alternatives and the Proposed RMP described in this chapter represent varying approaches to addressing and resolving key planning issues (Chapter 1) and to managing resources and resource uses in the planning area. Each comprises two categories of land use planning decisions: (1) desired outcomes (goals and objectives) and (2) allowable uses and management actions that are anticipated to achieve the desired outcomes. These two categories are discussed below.

2.2.1 Desired Outcomes (Goals and Objectives)

Goals and objectives provide overarching direction for BLM actions in meeting the agency's legal, regulatory, policy, and strategic requirements. Goals are broad statements of desired outcome but generally are not measurable. Objectives are more specific statements of a desired outcome that may include a measurable component. In general, the objectives are anticipated to achieve the stated goals.

2.2.2 Allowable Uses and Management Actions

After establishing desired outcomes, the BLM identifies allowable uses (i.e., land use allocations) and management actions for different alternatives that are anticipated to achieve the desired outcomes (i.e., goals and objectives). Alternatives were developed to address planning issues, resolve resource conflicts, improve consistency, and ensure resource-specific decisions for the following categories in the RMP revision process: 1) physical, biological, and cultural resources; 2) resource uses; and 3) special designations.

Allowable uses identify where land uses are allowed, restricted, or prohibited on all BLM-administered surface and federal mineral estate in the planning area. Alternatives may include specific land use restrictions to meet goals and objectives and may exclude certain land uses to protect resource values. For example, alternatives considered for this Proposed RMP close all suitable wild and scenic river segments to oil and gas leasing. Because the alternatives identify whether particular land uses are allowed, restricted, or prohibited, allowable uses often include a spatial (e.g., map) component.

Management actions are those actions anticipated to achieve desired outcomes. These actions include proactive measures (e.g., measures taken to maintain, restore, or improve land health), as well as measures or criteria that would be applied to guide day-to-day activities occurring on public land.

Although anticipated to achieve desired outcomes, the components described above may not be achieved during the planning period because of limitations in funding or staffing, changing policies or priorities, or new information. These factors could also affect the rate of RMP implementation. It is important to note that the RMP is strategic in nature, and, while it provides an overarching vision for managing resources in the planning area, it also allows management flexibility in light of changing priorities, information, and circumstances.

2.3 ALTERNATIVES CONSIDERED IN DETAIL

2.3.1 Overview of the Alternatives

The BLM identifies and analyzes the Proposed RMP in the PRMP/FEIS. The BLM does not carry forward the DRMP/DEIS Alternative B (the Preferred Alternative) into the PRMP/FEIS Proposed RMP. Rather the Proposed RMP consists of a combination of all the alternatives, including Alternative B in response to public comments and internal review. While, the Proposed RMP was crafted primarily from Preferred Alternative in the DRMP/DEIS (Alternative B), it is important to note that other decisions within the range of alternatives presented in the DRMP/DEIS, including the No Action Alternative and Alternatives A, C, and D that have been incorporated into the PRMP/FEIS as well. The DRMP/DEIS Alternative B has been removed from the PRMP/FEIS. The BLM only identifies and analyzes the Proposed RMP in the PRMP/FEIS. The other DRMP/DEIS Alternatives N, A, C and D and analysis are just carried forward in the PRMP/FEIS for comparative purposes and to correct some of the mistakes that were identified during the public comment period.

This section summarizes four DRMP/DEIS alternatives and the Proposed RMP. It includes a brief description of each plus a comparative summary of proposed LUP decisions by alternative (Section 2.6).

2.3.1.1 Alternative N (No Action Alternative)

Alternative N represents the continuation of current management under the existing six LUPs, as amended. The existing LUPs are the *Mountain Valley MFP* (1982), the *Henry Mountain MFP* (1982), the *Parker Mountain MFP* (1982), the *Cedar-Beaver-Garfield-Antimony RMP* (1986), the *Forest MFP* (1977), and the *San Rafael RMP* (1991). Alternative N provides the baseline against which to compare the other alternatives. It includes existing Areas of Critical Environmental Concern (ACEC) (four areas totaling 14,780 acres) and eligible wild and scenic river segments (WSR) (12 segments totaling 135 miles). None of the eligible segments would be found suitable for congressional designation to the National Wild and Scenic Rivers System. Alternative N is the least restrictive to off-highway vehicle (OHV) use.

2.3.1.2 Alternative A

Alternative A emphasizes commodity production, and mineral extraction—mining, oil and gas leasing, grazing, commercial recreation, and commercial woodland products harvesting—and motorized recreation. Compared with all other alternatives, Alternative A conserves the least land area for physical, biological, and cultural resources and proposes the least special designations (no suitable WSR segments; no ACECs).

2.3.1.3 Proposed RMP

The Proposed RMP has been identified by BLM because it represents an attempt to balance protection/conservation of physical, biological, and cultural resources while providing for commodity production and mineral extraction. The Proposed RMP designates ACECs (two areas totaling 2,530 acres) recommends a WSR segment (5 miles), and manages non-Wilderness Study Area (WSA) lands for wilderness characteristics (78,600 acres).

2.3.1.4 Alternative C

Alternative C emphasizes conservation of physical, biological, and cultural resources over commodity production, mineral extraction, and motorized recreation access. Alternative C (along with Alternative D) designates the most ACECs (16 areas totaling 886,810 acres) and recommends the most eligible WSR segments (12 segments totaling 135 miles) as suitable for congressional designation to the National Wild and Scenic Rivers System.

2.3.1.5 Alternative D

Alternative D emphasizes conservation of physical, biological, and cultural resources over commodity production, mineral extraction, and motorized recreation access. Compared with all alternatives, Alternative D conserves the most land area for physical, biological, and cultural resources; (along with Alternative C) designates the most ACECs (16 areas totaling 886,810 acres) and recommends the most eligible WSR segments (12 segments totaling 135 miles) as suitable for congressional designation to the National Wild and Scenic Rivers System; and emphasizes management of non-WSA lands with wilderness characteristics (682,600 acres), in order to protect, preserve, and maintain their wilderness characteristics. Except for management of lands with wilderness characteristics, decisions under Alternative D are the same as under Alternative C.

2.4 ADAPTIVE MANAGEMENT

Adaptive management is a formal, systematic, and rigorous approach to learning from the results of management actions, accommodating change, and improving management. It involves synthesizing existing knowledge, exploring alternative actions, and making explicit forecasts about their results. Management actions and monitoring programs are carefully designed to generate reliable feedback and clarify the reasons underlying results. Actions and objectives are then adjusted based on this feedback and improved understanding to continue to try to achieve the desired outcomes. In addition, decisions, actions, and results are carefully documented and communicated to others so that knowledge gained through experience is passed on rather than lost when individuals move or leave the organization.

LUP-level decisions would not be immediately adaptable. These include the goals and objectives, allowable uses, management actions, and special designations. Plan amendments would be required to change these decisions. Implementation- or activity-level decisions could be subject to adaptive management. Future activity-level plans would follow NEPA procedures and involve the public.

This PRMP/FEIS recommends an adaptive management strategy. The adaptive management process is flexible and generally involves four phases: planning, implementation, monitoring, and evaluation. As the BLM obtains new information, it is able to evaluate monitoring data and other resource information to periodically refine and update desired outcomes (goals and objectives), management actions, and allowable uses. This allows continual refinement and improvement of management prescriptions and practices.

2.5 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

This section provides a summary of two alternatives the BLM considered but eliminated from detailed analysis, as well as the reasons for not analyzing them in detail.

2.5.1 No Grazing Alternative

An alternative that proposes to make the entire RFO unavailable for grazing would not meet the purpose and need of this PRMP/FEIS. NEPA requires that agencies study, develop, and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources. No issues or conflicts have been identified during this land use planning effort that require the complete elimination of grazing within the planning area for their resolution. Where appropriate, removal of livestock and adjustments to livestock use have been incorporated in this planning effort. Because the BLM has considerable discretion through its grazing regulations to determine and adjust stocking levels, seasons-of-use, and grazing management activities, and to allocate forage to uses of the public lands in RMPs, the analysis of an alternative to entirely eliminate grazing is not needed.

An alternative that proposes to make the entire planning area unavailable for grazing would also be inconsistent with the intent of the Taylor Grazing Act, which directs the BLM to provide for livestock use of BLM lands; to adequately safeguard grazing privileges; to provide for the orderly use, improvement, and development of the range; and to stabilize the livestock industry dependent upon the public range.

FLPMA requires that public lands be managed on a “multiple use and sustained yield basis” (FLPMA 43 United States Code [U.S.C.] Section 302 (43 U.S.C. 1732)(a) and Section 102 (43 U.S.C. 1701)(7)) and includes livestock grazing as a principal or major use of public lands. While multiple use does not require

that all lands be used for livestock grazing, complete removal of livestock grazing in the entire planning area would be arbitrary and would not meet the principle of multiple use and sustained yield.

Livestock grazing is and has been an important use of the public lands in the planning area for many years and is a continuing government program. The CEQ guidelines for compliance with NEPA require that agencies analyze the "No Action Alternative" in all EISs (40 CFR 1502.14(d)). For the purposes of this NEPA analysis, the "no action alternative" is to continue the status quo, which includes livestock grazing. For this reason and those stated above, the RFO dismissed a no grazing alternative for the entire planning area from further consideration in this PRMP/F EIS.

2.5.2 No Leasing Alternative

During scoping and/or the comment period for the DRMP/DEIS, it was suggested that the BLM should address a "No-Leasing Alternative" because the "No-Leasing Alternative" is the equivalent of the "No Action Alternative" that must be analyzed in all EISs.

The "No-Leasing Alternative" in an RMP revision is actually an action alternative because where lands have already been leased, the no-action for NEPA purposes continues to allow for (honor) valid existing rights. Proposing a "No-Leasing Alternative" would require revisiting existing leases and either buying them back from the lessee or allowing them to expire on their own terms. The first option (buying back), is outside the scope of any RMP. This is a political decision that the BLM has no authority to undertake in planning. As a result, the BLM does not regularly include a "No-Leasing Alternative."

The purpose and need for the LUP is to identify and resolve potential conflicts between competing resource uses rather than to eliminate a principal use of the public lands in the RFO. Leasing the public lands for oil and gas exploration and production is required by the Mineral Leasing Act of 1920, as amended, and the BLM's current policy is to apply the least restrictive management constraints to the principal uses of the public lands necessary to achieve resource goals and objectives. A field office-wide "No-Leasing Alternative" would be an unnecessarily restrictive alternative for mineral exploration and production on the public lands.

NEPA (Section 102 (E)) requires that agencies "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources." No issues or conflicts have been identified during this land use planning effort that require the complete elimination of oil and gas leasing within the planning area for their resolution. The BLM's Land Use Planning Handbook (BLM Manual Rel. 1-1693), Appendix C, item H, requires that LUPs identify areas as open or unavailable for leasing.

Given the potential range of decisions available in the DRMP/DEIS, the analyzed alternatives include no leasing for certain areas; but a field office-wide "No-Leasing Alternative" is not necessary to resolve issues and protect other resource values and uses.

As mentioned above, a "No-Leasing Alternative" should not be confused with the "No Action Alternative" for purposes of NEPA compliance. Leasing and No Leasing on the public lands has previously been analyzed in several NEPA documents. In 1973, the Department of the Interior (USDI) published the *Final Environmental Impact Statement on the Federal Upland Oil and Gas Leasing Program* (USDI, 1973). The proposed action was to lease federal lands for production of oil and natural gas resources. Alternatives included the No Action Alternative, which at initiation of the program was "No Leasing." To supplement that EIS, the BLM prepared a series of Environmental Assessments (then titled Environmental Analysis Records or EARs) including the *Richfield Oil and Gas Program Environmental Analysis Record (EAR), 1975–76*, which addressed oil and gas leasing for the public lands

in the RFO area. Alternatives again included the No Action or "No Leasing" alternative. The outcome was a category system for leasing that categorized all public and United States Forest Service (USFS) lands into four groups: 1) open to leasing with standard lease stipulations, 2) Special Stipulations to address special concerns, 3) NSO and 4) No Leasing. Since completion of the EAR in 1975–76, oil and gas leasing in the RFO has been an ongoing federal program under the established categories.

The CEQ (Section 1502.14(d) of NEPA) requires the alternatives analysis in an EIS to "include the alternative of no action" but explains that there are two distinct interpretations of "no action" that must be considered, depending on the nature of the proposal being evaluated. "The first situation might involve an action such as updating a land management plan where ongoing programs initiated under existing legislation and regulations will continue, even as new plans are developed. In these cases 'no action' is 'no change' from current management direction or level of management intensity. To construct an alternative that is based on no management at all would be a useless academic exercise. Therefore, the 'no action' alternative may be thought of in terms of continuing with the present course of action until that action is changed." (CEQ Forty Most Asked Questions, Question 3). Therefore, for the RFO DRMP/EIS, the "No-Action Alternative" is to continue the status quo, which is to lease under the oil and gas stipulations (formerly categories) established in the *Mountain Valley MFP* (1982), the *Henry Mountain MFP* (1982), the *Parker Mountain MFP* (1982), the *Cedar-Beaver-Garfield-Antimony RMP* (1986), the *Forest MFP* (1977), and the *San Rafael RMP* (1991), as well as subsequent plan amendments.

2.5.3 Livestock Grazing Adjustments Alternative

During scoping and comment on the DRMP/EIS, it was suggested that the BLM consider adjustments to livestock numbers, livestock management practices, and the kind of livestock grazed on allotments within the RFO to benefit wildlife and protect and promote land health, including soils, hydrologic cycles, and biotic integrity.

BLM policy regarding adjustments to the levels of livestock use authorized is to monitor and inventory range conditions under existing stocking levels and make adjustments to livestock use as indicated by this data to help assure that the Utah Standards for Rangeland Health and resource objectives are met. Regulations at 43 CFR 4130.3 require that the terms and conditions under which livestock are authorized "ensure conformance with the provisions of subpart 4180" (Standards for Rangeland Health) and further, that "livestock grazing use shall not exceed the livestock carrying capacity of the allotment." It would be inappropriate and unfeasible to estimate and allocate the available forage, design specific management practices, and determine if changes to the kind of livestock are necessary for each allotment in the RFO or in the area as a whole in the RMP/EIS. Such changes would not be supportable considering the type and amount of data required and the analysis necessary to make such changes.

According to BLM policy, decisions regarding authorized livestock use levels and the terms and conditions under which they are managed is an implementation decision (H-1610-1, Appendix C, Page 15). BLM range condition according to the Utah Standards for Rangeland Health conducts monitoring and inventories, and evaluates this data on a periodic basis, normally on an allotment and/or watershed basis. After NEPA analysis, necessary changes to livestock management and implementation of Utah's Guidelines for Rangeland Management are implemented through a proposed decision in accordance with 43 CFR 4160. These decisions determine the exact levels of use by livestock in conformance with the LUP and to meet resource objectives and maintain or enhancing land health. For these reasons the Livestock Grazing Adjustments alternative has been dismissed from further consideration in this LUP revision.

2.5.4 SUWA Alternative

In November 2003, the Southern Utah Wilderness Alliance (SUWA) submitted to the BLM an outline and map for an RMP alternative. It divided the lands managed by the RFO into management zones and provided brief prescriptions for managing each zone. While it provided an outline for management, it fell short of a fully developed alternative because it did not address and attempt to resolve the issues raised during scoping nor the multiple laws, regulations, and policies that BLM must consider in developing an RMP. Consequently, the SUWA Alternative does not meet the purpose and need for this plan revision, and it is largely inconsistent with the FLPMA's multiple use sustained yield mandate. For these reasons, the RFO dismissed the SUWA Alternative from further consideration in this PRMP/FEIS. However, elements of it are included in Alternatives C and D.

2.6 PROPOSED RMP AND DRAFT RMP ALTERNATIVES DECISION TABLES

The following tables present the details of the proposed management for each resource, resource use, and special designation for the Proposed RMP and DRMP/DEIS Alternatives.

2.6.1 Natural, Biological, and Cultural Resources

Air Quality

Table 2-1. Air Quality

Desired Outcomes (Goals and Objectives)
• Ensure authorizations and management activities comply with local, state, and federal air quality regulations, requirements, and implementation plans. • Manage all BLM and BLM-authorized activities to maintain air quality within the thresholds established by the NAAQS and ensure that those activities continue to keep the area in attainment, meet PSD Class II standards, and protect the Class I airsheds. • Manage BLM and BLM-authorized activities to comply with the Utah Enhanced Smoke Management Plan, August 11, 2003, and the Utah State Law R307-204 Emission Standards: Smoke Management, August 1, 2007. • Minimize the impact of management actions in the planning area on air quality by complying with all applicable air quality laws, rules and regulations. • Maintain concentrations of criteria pollutants associated with management actions in compliance with applicable State and Federal Ambient Air Quality Standards (AAQS). • Maintain concentrations of Prevention of Significant Deterioration (PSD) pollutants associated with management actions in compliance with the applicable increment.
Issue: Management of Air Quality
Management Actions
Common to the Proposed RMP and Draft RMP Alternatives
• Mitigate potential adverse impacts of site-specific actions identified in NEPA documents prepared at the time an action is proposed, through best available control technology as part of the state permitting process and PSD review. • BLM will continue to work cooperatively with state, federal, and tribal entities in developing air quality assessment protocols to address cumulative impacts and regional air quality issues. • BLM will continue to work cooperatively with the Utah Airshed Group to manage emissions from wildland and prescribed fire activities. • National Ambient Air Quality Standards are enforced by the Utah Department of Environmental Quality, Division of Air Quality (UDEQ-DAQ), with EPA oversight. Special requirements to reduce potential air quality impacts will be considered on a case-by-case basis in processing land use authorizations. • BLM will utilize BMPs and site specific mitigation measures, when appropriate, based on site specific conditions, to reduce emissions and enhance air quality. Examples of these types of measures can be found in the Four Corners Air Quality Task Force Report of Mitigation Options, November 1, 2007. • Project specific analyses will consider use of quantitative air quality analysis methods (i.e. modeling), when appropriate as determined by BLM, in consultation with state, federal, and tribal entities. • Mitigate actions that compromise ambient air quality standards or visibility within the Class I airsheds.

Soil Resources

Table 2-2. Soil Resources

Desired Outcomes (Goals and Objectives)				
• Maintain or improve soil quality and long-term soil productivity through implementation of Standards for Rangeland Health and other soil protection measures. • Manage uses to minimize and mitigate damage to soils. • Manage soil resources to: – Maintain or increase soil productivity – Prevent or minimize accelerated soil erosion – Prevent or minimize flood and sediment damage, as needed – Reduce resource loss from floods and erosion – Maintain vegetation cover at or above the level necessary to avoid accelerated soil erosion.				
Issue: Protection of Soil Resources				
Management Actions				
Common to the Proposed RMP and Draft RMP Alternatives				
Proceed with surface disturbance and reclamation activities consistent with current authorizations and subject to the following: • Utah Standards for Rangeland Health would be followed to maintain or improve soil conditions. • Activities would be the minimum necessary to accomplish the task. • Reclamation would be required for road realignments. • Measures to stabilize soils and minimize surface water runoff would be required, both during project activities and following project completion. • Reclamation of all surface disturbances would be initiated during or immediately upon completion of the authorized project. Reclamation could include recontouring the disturbed area to blend with the surrounding terrain, ripping compacted areas, replacement of topsoil, seeding, planting, and/or providing effective ground cover.				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Not specifically addressed in existing plans.	• Implement appropriate BMPs designed to protect water quality for all ground disturbing activities (Appendix 14). • Close and reclaim all temporary roads immediately upon completion of the project. Reclaimed roads could be barricaded or signed until reclamation objectives were achieved. • Remove facilities or improvements no longer necessary reclaim them, provided no historic properties would be affected.			

Water Resources

Table 2-3. Water Resources

Desired Outcomes (Goals and Objectives)
• Maintain and/or restore overall watershed health and reduce erosion, stream sedimentation, and salinization of water. • Work to improve water quality on listed streams and prevent listing of additional streams under the Clean Water Act, Section 303(d) (Appendix 4). • Improve quality and quantity of water in all streams, with particular emphasis on streams with populations of native species, or with non-native game fish, as well as other aquatic species. • Maintain and/or restore the chemical, physical, and biological integrity of the planning area's waters. • Protect community watersheds and sources of culinary water. • Avoid adverse impacts to floodplains. • Restore and preserve the natural and beneficial values served by floodplains in carrying out BLM's responsibilities for acquiring, managing, and disposing of federal lands and facilities (Executive Order 11988, Floodplain Management). • Manage resources to reduce salinity loading where possible and make progress toward accomplishing the goals and objectives outlined in the Colorado River Salinity Control Act.
Issue: Water Quality and Quantity
Management Actions
Common to the Proposed RMP and Draft RMP Alternatives
Implement appropriate BMPs designed to protect water quality for all ground disturbing activities (Appendix 14).
Surface water: • Utah DEQ-Division of Water Quality identifies impaired watersheds for which total maximum daily loads (TMDL) must be developed. BLM will continue to cooperate and contribute to both the completion of the TMDL process and implementation of recommendations in the final reports.
Recreational water standards: • Maintain or improve water quality and quantity for recreational uses
Municipal watershed areas: • Manage culinary water sources to preserve the quality and health of water sources.
Public water systems: • Continue to operate and maintain public drinking water systems at BLM facilities to comply with transient non-community water system requirements as defined by State of Utah Administrative Code 309—Water Quality Monitoring Standards. The RFO would continue to gather source samples for laboratory analysis when the water system is operating (seasonal use), including coliform samples quarterly; nitrates yearly; and nitrite/sulfate every 3 years. • Identify public water systems with surface water or ground water sources (e.g., delineated drinking water source protection zones) that may be affected by BLM-authorized activities. Ensure that BLM-authorized activities do not pose a threat to public water systems.

Issue: Protection of Groundwater				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Maintain a 500-foot buffer zone of no surface disturbance and/or occupancy around natural springs to protect water quality.	Maintain buffer zones of no surface disturbance and/or occupancy around natural springs unless it can be shown that (1) there are no practical alternatives, or (2) all long-term impacts can be fully mitigated, or (3) the activity will benefit and enhance the riparian area. Base the size of the buffer zone on geohydrological, riparian, and other factors necessary to protect the water quality of the springs. If these factors cannot be determined, maintain a buffer zone of the 100-year floodplain or 330 feet on either side from the centerline, whichever is greater.		Maintain buffer zones of no surface disturbance and/or occupancy around natural springs unless it can be shown that (1) there are no practical alternatives, or (2) all long-term impacts can be fully mitigated, or (3) the activity will benefit and enhance the riparian area. Base the size of the buffer zone on geohydrological, riparian, and other factors necessary to protect the water quality of the springs. If these factors cannot be determined, maintain a 660-foot buffer zone from the outer edge.	

Vegetation

Table 2-4. Vegetation Decisions

Desired Outcomes (Goals and Objectives)				
• Manage and mitigate activities to restore, sustain, and enhance the health of plant associations. • Manage all resources and resource uses to achieve the Standards for Rangeland Health. • Enhance and/or restore native and desirable naturalized plant species. • Manage for a mix of vegetative types, structural stages, and landscape and riparian functions, and provide for native plant, fish, and wildlife (including SSS) habitats. • Enhance biological and genetic diversity of natural ecosystems. • Maintain relict vegetation communities. • Sustain or reestablish the integrity of the sagebrush biome to provide the amount, continuity, and quality of habitat that is necessary to maintain sustainable populations of the Greater sage-grouse and other sagebrush-dependent wildlife species. • Manage all riparian areas to maintain, restore, or improve unique habitat characteristics, including diversified plant species composition, plant species structural diversity, and adequate native vegetative cover and density for stream bank stabilization. All riparian areas would be managed to be in properly functioning condition.				
Issue: Overall Vegetation Management				
Management Actions				
Common to the Proposed RMP and Draft RMP Alternatives				
• Treat areas determined to need reseeding with a variety of plant species that are desirable for wildlife habitat, livestock, watershed management, and other resource values while maintaining vegetation species diversity. • Where appropriate, require on-site mitigation when surface disturbance cannot be avoided on a site-specific basis. The BLM will approach compensatory mitigation on an "as appropriate" basis where it can be performed on-site, and on a voluntary basis where it is performed off-site, or, in accordance with current guidance. • Maintain existing vegetative treatments to provide suitable habitats for wildlife and adequate forage for livestock.				
Issue: Vegetation Treatments				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Manipulate vegetation using mechanical, wildland and/or prescribed fire, and chemical treatments on a case-by-case basis to achieve or maintain Standards for	Maintain existing vegetation treatments and implement additional treatments (including prescribed fire and wildland fire use, mechanical, biological, manual, and	Maintain existing vegetation treatments and implement additional treatments (e.g., prescribed fire and wildland fire use, mechanical, biological, manual, and	Allow only natural processes (e.g., prescribed fire and wildland fire use, disease, and insects) to achieve or maintain Standards for Rangeland Health and desired vegetation condition. Vegetation treatments could be conducted on up to 520,000 acres over the life of the plan. (An annual average of 26,000 acres would need to receive treatment to reach the	

Table 2-4. Vegetation Decisions

Rangeland Health and desired vegetation condition.	chemical) to increase productivity for resource uses and achieve or maintain Standards for Rangeland Health and desired vegetation condition. Vegetation treatments (e.g., wildlife habitat treatments, watershed treatments, livestock grazing treatments, fuels treatments, stewardship contracts, etc.) could be conducted on up to 1,472,000 acres over the life of the plan. (An annual average of 73,600 acres would need to receive treatment to reach the total treatment acreage listed (Table 2-11a). Actual annual treatment acreage would vary depending on conditions, staffing, etc. These acreage figures include all vegetation and fire fuel treatments (Table 2-11)).	chemical) to achieve or maintain Standards for Rangeland Health and desired vegetation condition. Vegetation treatments (e.g., wildlife habitat treatments, watershed treatments, livestock grazing treatments, fuels treatments, stewardship contracts, etc.) could be conducted on up to 1,472,000 acres over the life of the plan. (An annual average of 73,600 acres would need to receive treatment to reach the total treatment acreage listed (Table 2-11a). Actual annual treatment acreage would vary depending on conditions, staffing, etc. These acreage figures include all vegetation and fire fuels treatments (Table 2-11)).	total treatment acreage listed (Table 2-11a). Actual annual treatment acreage would vary depending on conditions, staffing, etc. These acreage figures include all vegetation and fire fuels treatments [Table 2-11]).
No action.	No action.	Allow temporary non-renewable use of targeted grazing to reduce site-specific fuels and/or noxious and invasive weeds (e.g. cheat grass).	No action.
The use and perpetuation of native species would be emphasized. However, when restoring or rehabilitating disturbed or degraded rangelands, non-intrusive, non-native plant species would be considered appropriate for use where	The use and perpetuation of native species would be emphasized. However, when restoring or rehabilitating disturbed or degraded rangelands, non-intrusive, non-native plant species may be used where native species: • Are not available • Are not economically feasible • Cannot achieve desired conditions, desired plant communities (DPC), or other ecological objectives as well as non-native species, and/or • Cannot compete with already established non-native species.		

Table 2-4. Vegetation Decisions

native species (a) are not available, (b) are not economically feasible, (c) cannot achieve ecological objectives as well as nonnative species, and/or (d) cannot compete with already established non-native species.	Non-native forbs and perennial grasses could be used in preference to monocultures of non-native annuals.

Issue: Management Activities in Riparian Areas

Management Actions

Common to the Proposed RMP and Draft RMP Alternatives

- Allow uses and activities in riparian areas consistent with Utah BLM Riparian Management Policy and in compliance with Executive Orders 11990 and 11988.
- Allow no new surface disturbing activities within a specified distance of riparian areas (see specific buffer sizes below), as measured from bank-full width along all perennial streams or streams with perennial reach unless the following criteria can be met:
  - There are no practical alternatives to the surface disturbance; or
  - All long-term impacts could be fully mitigated; or
  - The activity would benefit the riparian area.
- The Utah BLM Riparian Management Policy identifies that Riparian areas will be retained in the public land system unless it can be clearly demonstrated that specific sites are so small or isolated that they cannot be managed in an effective manner by BLM or through agreement with State or Federal agencies or interested conservation groups.
- Coordinate riparian management with interested federal, state, tribal and local governments and private conservation groups, etc.

Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
The buffer zone would be 500 feet in the Cedar/Beaver/ Garfield/Antimony RMP area, and 330 feet throughout the remainder of the RFO.	The buffer zone would be 330 feet on each side of the stream.	The buffer zone would be equal to the 100-year floodplain or 330 feet on either side from the centerline, whichever is greater, and would be included for riparian areas.	The buffer zone would be 660 feet on each side of the stream.	The buffer zone would be 660 feet on each side of the stream.

Table 2-4. Vegetation Decisions

<table>
<tr><th colspan="5">Issue: Management of Noxious Weeds and Invasive Species</th></tr>
<tr><th colspan="5">Management Actions</th></tr>
<tr><th colspan="5">Common to the Proposed RMP and Draft RMP Alternatives</th></tr>
<tr><td colspan="5">• Implement noxious weed and invasive species control actions as per national guidance and local weed management plans in cooperation with state, federal, affected counties, adjoining private land owners, and other partners or interests directly affected.
• Adhere to the Standard Operating Procedures and Guidelines for All Treatment Methods from the Biological Opinion from the Vegetation Treatments on BLM lands in 17 Western States Programmatic Environmental Report, 2007.
• Control invasive and non-native weed species and prevent the introduction of new invasive species by implementing a comprehensive weed program including: coordination with key partners, prevention and early detection, education, inventory and monitoring, and using principles of integrated weed management.</td></tr>
<tr><th>Alternative N (No Action)</th><th>Alternative A</th><th>Proposed RMP</th><th>Alternative C</th><th>Alternative D</th></tr>
<tr><td colspan="2">Apply approved weed control methods to noxious weeds in an identified integrated weed management program (including preventive management and education, as well as mechanical, biological, and chemical techniques). Do so in cooperation with state, federal, affected county governments, adjoining private land owners, and other directly affected interests.</td><td colspan="3">Emphasize natural processes (e.g., wildland and/or prescribed fire, disease, and insects), preventative management and education to reduce the spread of noxious and invasive species. Other methods, including biological and hand cutting, could be used to remove noxious weeds and non-native invasive species to restore ecological condition of a site.</td></tr>
<tr><th colspan="5">Issue: Insect Pest Management</th></tr>
<tr><th colspan="5">Management Actions</th></tr>
<tr><th>Alternative N (No Action)</th><th>Alternative A</th><th>Proposed RMP</th><th>Alternative C</th><th>Alternative D</th></tr>
<tr><td>Develop and implement strategies in cooperation with the State of Utah, adjacent states, federal agencies, affected counties, adjoining private land owners, and other interests directly affected.</td><td>Treat all insect pests in coordination with the State of Utah, adjacent states, federal agencies, affected counties, adjoining private land owners, and other interests directly affected.</td><td>Treat insect pests that exceed an economic threshold on public land adjacent to other landowners or that impact resources in coordination with the State of Utah, adjacent states, federal agencies, affected counties, adjoining private land owners, and other directly affected interests.</td><td colspan="2">Implement no control measures for insect pests.</td></tr>
</table>

Cultural Resources

Table 2-5. Cultural Resources Decisions

Desired Outcomes (Goals and Objectives)				
• Preserve and protect significant cultural resources and ensure that they are available for appropriate uses by present and future generations. • Seek to reduce imminent threats from and resolve potential conflicts caused by natural or human-caused deterioration, or potential conflicts with other resource uses. • Identify priority areas for new field inventory, based on their probability for significant resources. • Coordinate with local historic and cultural preservation and interpretation efforts. • Provide opportunities for traditional (American Indian) uses of cultural resources and sites. • Ensure compliance with Native American Graves Protection and Repatriation Act (NAGPRA) and National Historic Preservation Act (NHPA).				
Issue: Management of Cultural Resources				
Management Actions				
Common to the Proposed RMP and Draft RMP Alternatives				
• Identify and manage traditional cultural properties (TCP) in coordination with American Indian tribes. • Mitigate adverse impacts to cultural resources resulting from authorized surface disturbing activities. • Meet responsibilities under the NHPA as addressed in the State Protocol Agreement between the Utah State Director of BLM and the Utah State Historic Preservation Officer (SHPO) and the Programmatic Agreement among the BLM, the Advisory Council on Historic Preservation, and the National Conference of SHPOs. • Complete cultural resources inventories prior to allowing permitted surface disturbing activities, excluding those areas and circumstances identified in BLM-Manual M-8110.23, Identifying & Evaluating Cultural Resources, and Handbook UT-BLM-H-8110, Guidelines for Identifying Cultural Resources, Section II.C and Appendix 1. • Coordinate Old Spanish Trail management with the National Park Service (NPS) and other agencies under Public Law 107-325. Specifically: – Provide interpretive information at appropriate locations – Retain public lands in federal ownership – Limit OHV use to designated routes. • Protect eligible cultural sites and mitigate impacts.				
Issue: Management of Cultural Resource Sites by Allocation to Use Categories				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Mitigate impacts to cultural resources from permitted	• Allocate and manage cultural resource sites for scientific use, public use, conservation use, traditional use, and experimental use categories described in Manual BLM-M-8110.4, Identifying and Evaluating Cultural Resources.			

Table 2-5. Cultural Resources Decisions

<table>
<tr><td>activities.</td><td colspan="4">• Reevaluate and revise cultural resources site allocations by site or area when circumstances change or when new data becomes available. Consult with the SHPO and Native American tribes as appropriate.
• Mitigation actions would not be necessary on cultural resource sites if both of the following conditions are met and documented:
– BLM and the SHPO have formally agreed the site is not eligible for listing on the National Register of Historic Places (NRHP)
– The site has no value for other cultural uses (as described in BLM-M-8110.4).</td></tr>
<tr><th colspan="5">Issue: Identification of Areas for New Field Inventories</th></tr>
<tr><th colspan="5">Management Actions</th></tr>
<tr><th>Alternative N
(No Action)</th><th>Alternative A</th><th>Proposed RMP</th><th>Alternative C</th><th>Alternative D</th></tr>
<tr><td>• No priority areas for new field inventories are identified in existing LUPs.</td><td>Inventory the following priority area:
• Horseshoe Canyon South WSA.</td><td>Inventory the following priority areas:
• Horseshoe Canyon South WSA
• Bull Creek Archaeological District
• Areas of special cultural designation that have not been fully inventoried.</td><td colspan="2">Inventory the following priority areas:
• Horseshoe Canyon South WSA
• Trough Hollow area
• Bull Creek Archaeological District
• Areas of special cultural designation that have not been fully inventoried.</td></tr>
<tr><th colspan="5">Issue: Coordination with American Indian Tribes</th></tr>
<tr><th colspan="5">Management Actions</th></tr>
<tr><th>Alternative N
(No Action)</th><th>Alternative A</th><th>Proposed RMP</th><th>Alternative C</th><th>Alternative D</th></tr>
<tr><td>Continue coordinating with the Paiute Tribe to identify the types of projects on which it wants to consult.</td><td colspan="4">• Work with Native American tribes to accommodate tribal access to sacred sites and traditional cultural properties and prevent or mitigate physical damage or intrusions that might impede their use.
• Establish agreements with all Native American tribes interested in the lands managed by the RFO to identify the types of projects on which they want to consult.</td></tr>
<tr><th colspan="5">Issue: Bull Creek Archaeological District</th></tr>
<tr><th colspan="5">Management Actions</th></tr>
<tr><th>Alternative N
(No Action)</th><th>Alternative A</th><th>Proposed RMP</th><th>Alternative C</th><th>Alternative D</th></tr>
<tr><td>Manage Bull Creek Archaeological District as open to oil and gas leasing.</td><td>Same as Alternative N.</td><td colspan="3">Manage the Bull Creek Archaeological District with major constraints (NSO).</td></tr>
</table>

Paleontological Resources

Table 2-6. Paleontological Resources Decisions

Desired Outcomes (Goals and Objectives)
• Protect scientifically significant paleontological resources. • Provide opportunities for scientific, educational, and recreational uses of paleontological resources. • Cooperate with other federal, state, and local agencies in paleontological resources management activities.
Issue: Management of Paleontological Resources
Management Actions
Common to the Proposed RMP and Draft RMP Alternatives
• Mitigate adverse impacts to vertebrate and significant non-vertebrate paleontological resources resulting from surface disturbing activities. • Support and provide public education and interpretive opportunities for paleontological resources, including agreements with visitor information providers, use of special designations, or interpretive sites. • Issue paleontological resource use permits for scientific study as appropriate. • Prohibit commercial collection of invertebrate and plant fossils without a BLM-issued permit.

Table 2-6. Paleontological Resources Decisions

Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
No similar action in any of the existing plans.	Require paleontological assessments prior to permitting surface disturbing activities in areas where there is a high potential to affect scientifically significant paleontological resources.	• Require on-the-ground paleontological inventories prior to permitting surface disturbing activities in areas where there is a high potential to affect scientifically significant paleontological resources. • Require paleontological assessments prior to permitting surface disturbing activities in areas where there is a moderate potential to affect scientifically significant paleontological resources.	Require on-the-ground paleontological inventories prior to permitting all surfacing disturbing activities.	
No similar action in any of the existing plans.	Paleontological inventories would not be required.	• Conduct paleontological inventories intermittently as resources allow. • Prioritize paleontological resource inventories based on the potential to affect scientifically significant resources.	• Conduct paleontological inventories on a limited but annual basis. • Prioritize paleontological resource inventories based on the potential to affect scientifically significant resources.	

Table 2-6. Paleontological Resources Decisions

Allow collection of common invertebrate and botanical paleontological resources for personal use.	Allow surface collection (as defined in BLM Manual 8270, *Paleontological Resources Management*) of common invertebrate and botanical paleontological resources for personal (non-commercial) use without permits and if consistent with other management decisions in this RMP. Significant resources of critical scientific and educational value would be protected.	Allow collection of common invertebrate and botanical paleontological resources for personal (non-commercial) use without permits only in specifically designated fossil collecting areas.
No similar action in any of the existing plans.	When appropriate, target fossil localities with significant scientific value for excavation and curation either by the BLM or by a qualified outside academic or curatorial/research facility to protect them from theft, erosion, and/or vandalism. If excavation is not carried out within one field season, periodically monitor to document the integrity of the locality until excavation and curation are completed.	
No similar action in any of the existing plans.	Monitor highly significant (scientific) localities with paleontological resources that are not feasible to excavate, curate, or interpret. Frequency of monitoring for identified localities would be determined by the significance of the resource and the risk of damage by either natural processes or human intrusion.	
No similar action in any of the existing plans.	Develop interpretation for significant localities and sites with displays that foster scientific knowledge of the unique nature of the resource and that create opportunities for public education and access to such resources.	
No similar action in any of the existing plans.	For all permitted actions occurring in paleontologically sensitive areas, include stipulation(s) to cover unanticipated paleontological discoveries during disturbance. This stipulation would mandate work stoppage (or avoidance), notification to the authorized officer, and protection of the material and geological context if any paleontological resources were discovered during disturbance activities. Other stipulations might be appropriate on a case-by-case basis.	

Visual Resources

Table 2-7. Visual Resource Management Decisions

<table>
<tr><th colspan="5">Desired Outcomes (Goals and Objectives)</th></tr>
<tr><td colspan="5">• Manage public lands for their scenic values while providing for overall multiple use and quality of life for local communities and visitors to public lands.
• Manage actions to preserve those scenic vistas that are deemed most important.</td></tr>
<tr><th colspan="5">Issue: Assignment of Visual Resource Management Classes to All Public Lands in the RFO</th></tr>
<tr><th colspan="5">Management Actions</th></tr>
<tr><th colspan="5">Common to the Proposed RMP and Draft RMP Alternatives</th></tr>
<tr><td colspan="5">• Designate WSAs as VRM Class I to maintain an undeveloped landscape and preserve their natural values according to direction in Instruction Memorandum IM-2000-096, Use of Visual Resource Management Class I Designation in Wilderness Study Areas.
• Ensure all activities authorized by the BLM meet the management objectives for the designated VRM class in that particular area.
• To the extent practicable, bring existing visual contrasts into VRM class conformance as the opportunity arises.</td></tr>
<tr><th>Alternative N
(No Action)</th><th>Alternative A</th><th>Proposed RMP</th><th>Alternative C</th><th>Alternative D</th></tr>
<tr><td>Manage the RFO according to the following VRM classes, as indicated on Map 2-1:
• Class I: 0 acres
• Class II: 529,500 acres
• Class III: 569,000 acres
• Class IV: 1,029,500 acres.
In accordance with BLM policy, WSAs would continue to be managed as VRM Class I (446,900 acres).</td><td>Designate the following VRM classes, as indicated on Map 2-2:
• Class I: 446,900 acres
• Class II: 0 acres
• Class III: 392,800 acres
• Class IV: 1,288,300 acres.
WSAs would be designated as VRM Class I (446,900 acres).</td><td>Designate the following VRM classes, as indicated on Map 2-3:
• Class I: 446,900 acres
• Class II: 249,800 acres
• Class III: 393,100 acres
• Class IV: 1,038,200 acres.
WSAs would be designated as VRM Class I (446,900 acres).</td><td>Designate the following VRM classes, as indicated on Map 2-4:
• Class I: 446,900 acres
• Class II: 230,600 acres
• Class III: 509,100 acres
• Class IV: 941,400 acres.
WSAs would be designated as VRM Class I (446,900 acres).</td><td>Designate the following VRM classes, as indicated on Map 2-5:
• Class I: 1,129,600 acres
• Class II: 66,700 acres
• Class III: 355,100 acres
• Class IV: 576,600 acres.
WSAs would be designated as VRM Class I (446,900 acres).</td></tr>
<tr><th colspan="5">Issue: Application of VRM Standards to Existing ROWs</th></tr>
<tr><th colspan="5">Management Actions</th></tr>
<tr><th colspan="5">Common to the Proposed RMP and Draft RMP Alternatives</th></tr>
<tr><td colspan="5">To avoid potential conflicts with the construction, operation, maintenance, and termination of facilities and improvements located on existing ROWs on public land, apply the following:
• Where a ROW grant specifically identifies an area and/or width, the VRM class within the specified area/width would be VRM Class IV.
• Where no width is specified, the VRM class within the interior boundaries of the area disturbed when the facility or improvement was initially constructed would be VRM Class IV.</td></tr>
</table>

Special Status Species

Table 2-8. Special Status Species Decisions

Desired Outcomes (Goals and Objectives)
• Conserve and recover all SSS (including listed species) and the ecosystems on which they depend. • Manage, minimize, and mitigate impacts to plant, fish, and animal species and habitats so that the need to list any of these species as threatened or endangered does not become necessary. • Promote recovery and conservation of special status plant, fish, and animal species, including those listed under the Endangered Species Act (ESA). • Prevent long-term habitat fragmentation through avoidance and/or site-specific reclamation to return areas to productive levels. • Continue to work with United States Fish and Wildlife Service (USFWS) and others to ensure that plans and agreements are updated and implemented as necessary to reflect the latest scientific data. • Where possible, implement the conservation actions identified in the Utah Comprehensive Wildlife Conservation Strategy (Utah Division of Wildlife Resources [UDWR] 2005c), which identifies priority wildlife species and habitats, identifies and assesses threats to their survival, and identifies long-term conservation actions needed, including those on BLM-administered lands.
Issue: Overall Special Status Species Management Guidance
Management Actions
Common to the Proposed RMP and Draft RMP Alternatives
• For listed species that do not have designated critical habitat, cooperate with the USFWS and other agencies, such as the UDWR, in managing the species and their habitat. • Allow, initiate, or participate in scientific research of listed and sensitive species and their habitats. • Collaborate with the appropriate local, state, and federal agencies to promote public education on species at risk, their importance to the human and biological community, and reasons for protective measures that would be applied to the lands involved. • Implement species-specific conservation measures to avoid or mitigate adverse effects to known populations of listed and non-listed special status plant and animal species on public lands. • Prohibit actions that destroy, adversely modify, or fragment listed threatened or endangered species' habitat. • Maintain the integrity of SSS habitat to provide the quantity, continuity, and quality of habitat necessary to maintain SSS populations. • Conduct habitat improvement treatments for SSS. future consultation would be needed for biological controls in SSS habitat. • Retain habitat for federally listed and candidate species in federal ownership. Exceptions may be considered in exchanges with the State of Utah and others after consultation with and concurrence from the USFWS. • Consider SSS habitat in all wildfire suppression efforts. • Conduct Section 7 consultation with the USFWS if biological treatments as a result of vegetation management actions are proposed in federally listed species habitats. **Recovery Plans and Conservation Agreements**

Table 2-8. Special Status Species Decisions

- Implement the goals and objectives of recovery plans, conservation agreements and strategies, and activity level plans using best available information to recover and conserve species to the point where requirements of the ESA are no longer necessary.
- Work with USFWS and others to ensure that plans and agreements are updated and implemented as necessary to reflect the latest scientific data.
- Implement the specific goals and objectives of recovery plans, conservation agreements and strategies, and approved activity-level plans.

Recovery Actions for Listed Species

- Do not adversely modify or destroy designated critical habitats for federally listed species.
- Provide habitat improvements and other management actions to promote conservation and recovery of listed species.

Reintroduction/Translocation of Special Status Species

- Allow translocations of listed and non-listed SSS to aid in conservation and recovery efforts. Implement necessary habitat manipulations and monitoring in translocation plans and allow identification and manipulation of Utah prairie dog translocation sites to achieve suitable conditions for successful translocations.

Issue: Habitat Mitigation

Management Actions

Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Decisions for habitat mitigation are not specifically addressed in existing plans.	• Use strategies to avoid or reduce habitat fragmentation when possible, including: – Collocating communication and other facilities – Employing directional drilling for oil and gas – Closing and reclaiming roads – Landscape scale evaluations – Using topographic and vegetative screening to reduce the influence of intrusions. • Mitigate the effects of proposed projects that have the potential to cause long-term or permanent habitat impacts or losses by enhancing, restoring, or creating other habitat within the project's region of influence. Consider protecting the habitat when the habitat type is rare and under severe development pressures. Protection should only be a portion of the mitigation and must contain elements of restoration or enhancement. • Use species-specific buffers and seasonal, temporal, and spatial restrictions to conserve habitat for SSS (Appendix 11 and Appendix 14).			

Issue: Protection of Raptor Habitat

Management Actions

Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Manage raptors as required in current LUPs.	• Employ "Raptor Best Management Practices" (Appendix 10), using seasonal and spatial buffers, as well as mitigation, to maintain and enhance raptor nesting and foraging habitat, while allowing other resource uses.			

Table 2-8. Special Status Species Decisions

	• Comply with Suggested Practices for Avian Protection on Power Lines: the State of the Art in 2006 (APLIC 2006) and Avian Protection Plan (APP) Guidelines (APLIC and USFWS 2005) for new powerline construction (including upgrades and reconstruction) to prevent electrocution of raptors.			
Issue: Management of OHV Use in Greater Sage-Grouse Habitats				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Continue to follow current policy for sensitive species.	Limit OHV use to designated routes in sage-grouse leks and nesting habitats.	Limit OHV use to designated routes and/or seasonal closure of designated routes in all Greater sage-grouse habitats, including: breeding (leks), nesting, brood-rearing, and wintering habitats.		
Issue: Special Stipulations for Surface Disturbing Activities Within Greater Sage-Grouse Habitat				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Prohibit surface disturbing activities from March 1 through July 15, for protection of species sensitivity during lekking activities. Prohibit surface disturbing activities within sage-grouse brooding habitat from April 1 through June 15 for protection of brooding and nesting activities.	Prohibit surface disturbing activities within one-quarter mile of sage-grouse leks from March 15 through June 1 for protection of species sensitivity during lekking activities. Any surface disturbing activity conducted outside this time frame would not result in an above-ground structure within one-quarter mile of leks from March 15 through June 1. No special stipulation required for surface disturbing activities within sage-grouse brooding habitat.	• Manage oil and gas leasing as open subject to major constraints (NSO) within ½ mile of greater sage-grouse leks. • Allow no surface disturbing or otherwise disruptive activities in greater sage-grouse winter habitat from December 15 through March 14. • Allow no surface disturbing or otherwise disruptive activities within 2 miles of a greater sage-grouse lek from March 15 to July 15 to protect sage-grouse breeding and brood-rearing habitat. See Appendix 11 for exceptions, modifications, or waivers.	• Prohibit surface disturbing activities within 2 miles of sage grouse leks from March 15 through June 1 for protection of species sensitivity during lekking activities. Any surface disturbing activity conducted outside this time frame would not result in an above ground structure within 2 miles of leks from March 15 through June 1. • Prohibit long-term surface disturbing activities within sage-grouse brooding/nesting habitat from April 1 through July 15 for protection of brooding and nesting activities. See Appendix 11 for exceptions, modifications, or waivers.	

Fish and Wildlife

Table 2-9. Fish and Wildlife Decisions

Desired Outcomes (Goals and Objectives)
• Maintain, restore, protect, and enhance habitats to support healthy populations of diverse fish and wildlife species, recognizing crucial habitats as management priorities.
• Manage habitat to prevent additional listings of species under the federal ESA, or the State of Utah's Species of Concern List.
• Manage for unfragmented blocks of habitat that provide for a variety of wildlife and fish species.
• Recognize and support the role of UDWR in managing wildlife and fish populations and regulating hunting and fishing.
• Recognize and support the role of USFWS in managing raptors, migratory birds, and threatened and endangered species.
• Recognize and support the role of the Federal Animal and Plant Health Inspection Service (APHIS) in controlling predators.
Issue: Overall Fish and Wildlife Management Guidance
Management Actions
Common to the Proposed RMP and Draft RMP Alternatives
• Recognize and coordinate with UDWR on its Management Plans and associated revisions, and (where appropriate) plans of other cooperating agencies. To the extent practicable, implement future plans on a case-by-case basis through applicable regulations.
• Implement BLM wildlife management plans.
• Implement the conservation actions identified in Executive Order 13186, Federal Agency Responsibilities under the Migratory Bird Treaty Act, with particular emphasis on those migratory birds identified as Priority Species in the Utah Avian Conservation Strategy (Parrish et al. 2002).
• Consider the USFWS Birds of Conservation Concern and the Utah Partners in Flight Priority Species to identify and conserve priority nesting habitats for migratory birds.
• Cooperate with UDWR in the management of fisheries, including habitat improvements and treatments.
• Work with UDWR to establish and maintain Blue Ribbon Fisheries, as defined by the Utah Blue Ribbon Fishery Advisory Council.
• Coordinate with UDWR to address population dynamics and habitat conditions for major habitat types that support a wide variety of game and non-game species.
• Use strategies to avoid or reduce habitat fragmentation, such as collocating facilities, employing directional drilling, reclaiming redundant roads, reclaiming roads no longer serving intended purpose, reducing road densities, and using topographic and vegetative screening to reduce influence of intrusions.
• The BLM will approach compensatory mitigation on an "as appropriate" basis where it can be performed onsite, and on a voluntary basis where it is performed off-site, or, in accordance with current guidance.
• Minor adjustments to crucial wildlife habitat boundaries periodically made by the UDWR would be accommodated through plan maintenance.
• Where possible, implement the conservation actions identified in the Utah Comprehensive Wildlife Conservation Strategy (UDWR 2005c), which identifies priority wildlife species and habitats, identifies and assesses threats to their survival, and identifies long-term conservation actions needed, including those on BLM-administered lands.

Table 2-9. Fish and Wildlife Decisions

Issue: Forage Management and Allocations				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Manage big game winter range to maximize browse production, using class of livestock and season of use.	Use prescriptive grazing to favor forage production on crucial big game winter range.	• Use prescriptive grazing to favor forage production for big game crucial winter range. • On suitable allotments, as determined on a case-by-case basis, authorize livestock grazing only on a nonrenewable basis to meet wildlife habitat objectives. These actions would be limited to crucial wildlife habitat where conventional grazing management practices were not allowing attainment of RMP objectives.	• Use prescriptive grazing to favor forage production for big game ranges. • On suitable allotments, as determined on a case-by-case basis, authorize livestock grazing only on a nonrenewable basis to meet wildlife habitat objectives. These actions would be limited to crucial wildlife habitat where conventional grazing management practices were not allowing attainment of RMP objectives.	
Accomplish habitat treatments to meet terrestrial, aquatic, and riparian habitat objectives through the use of prescribed fire, chemical, biological, and mechanical methods.	Accomplish habitat treatments to meet terrestrial, aquatic, and riparian habitat objectives through the use of prescribed and/or wildland fire, chemical, biological, and mechanical methods.		Accomplish habitat treatments to meet terrestrial, aquatic, and riparian habitat objectives through the use of prescribed and/or wildland fire and biological methods.	
Issue: Management of Henry Mountain Bison and Mule Deer				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Provide no special management for Henry Mountain bison or mule deer.		Develop a Habitat Management Plan (HMP) for bison, mule deer, and other	• Designate an ACEC in the Henry Mountains (288,200 acres) to recognize bison, mule deer, and scenic values.	

Table 2-9. Fish and Wildlife Decisions

		big game species within the Henry Mountain area in consultation with UDWR. (The HMP would address management objectives with respect to size of herds (numbers of animals), desired ratio of male to female animals, and the reauthorization of voluntarily relinquished grazing preference and reallocation of forage on specific grazing allotments. The HMP would also address needed improvements for range conditions, including proposed habitat improvement projects for both livestock and big game species to mitigate potential conflicts during seasons of use and the strategies required for herd adjustments during critical droughts.)	• Manage bison habitat in cooperation with UDWR. • Allow manipulation of habitat to benefit wildlife. • Allow range improvements outside of wilderness characteristics areas (Alternative D only) that benefit wildlife (water developments, fencing riparian areas, etc.). • Develop an HMP for bison and mule deer within the ACEC. • Address voluntary relinquishments of grazing preference and reauthorization of AUMs as provided for in Instruction Memorandum IM-2007-67, Relinquishment of Grazing Preference on BLM-Administered Lands. • See Table 2-21 (ACEC Decisions) for other management prescriptions.
Issue: Management of Desert Bighorn Sheep Habitat				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Comply with the Henry Mountains Desert Bighorn HMP (1990).	Prohibit change in the kind of livestock from cattle to domestic sheep in those allotments with bighorn sheep habitat identified in the *Desert Bighorn Sheep HMP*.		Prohibit change in kind of livestock from cattle to domestic sheep within all identified bighorn sheep habitat.	
Issue: Management of OHV Use in Deer and Elk Habitats				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Continue OHV management as outlined in current LUPs.	Require no specific OHV restrictions within crucial deer	• Limit OHV use to designated routes in	• OHV use in 509,000 acres of deer and elk	• OHV use in 393,000 acres of deer and elk

Table 2-9. Fish and Wildlife Decisions

	and elk habitat.	deer and elk crucial winter habitat (806,700 acres), except for Glenwood and Aurora, Managed Open Areas. • Close 4,500 acres of deer and elk crucial winter range to OHV use. • Consider seasonal closure of designated routes on a case-by-case basis. (Maps 3-6 and 3-7)	crucial winter range would be limited to designated routes. • 142,000 acres of deer and elk crucial winter range would be closed to OHV use. (Maps 3-6 and 3-7)	crucial winter range would be limited to designated routes. • 258,000 acres of deer and elk crucial winter range would be closed to OHV use. (Maps 3-6 and 3-7)
Issue: Management of OHV Use in Crucial Bison Habitat				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Close crucial bison habitat to OHV use from December 20–March 20 at Swap Mesa and Cave Flat.	Limit OHV use to designated routes in crucial bison habitat (251,000 acres).	• OHV use in 257,600 acres of crucial bison habitat would be limited to designated routes. • 1,000 acres of crucial bison habitat would be closed to OHV use. • Consider seasonal closure of designated routes on a case-by-case basis.	• OHV use in 62,000 acres of crucial bison habitat would be limited to designated routes. • 189,000 acres of crucial bison habitat would be closed to OHV use. (Map 3-5)	• OHV use in 44,000 acres of crucial bison habitat would be limited to designated routes. • 207,000 acres of crucial bison habitat would be closed to OHV use. (Map 3-5)
Issue: Management of OHV Use for Game Retrieval				
Management Actions				
Common to the Proposed RMP and Draft RMP Alternatives				
Manage OHV use for game retrieval consistent with OHV area and route designations.				

Table 2-9. Fish and Wildlife Decisions

Issue: Seasonal Stipulation for Surface Disturbing Activities in Bison Habitats				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Restrict oil and gas exploration and leasing activities in crucial bison habitats (Map 3-5) from December 1 through April 15 for protection of winter habitats and species sensitivity during calving season.	No special stipulation required; however, mitigation may be required for surface disturbing activities in crucial bison habitats (Map 3-5) from November 1 through May 15.	Restrict surface disturbing activities in crucial bison habitats (Map 3-5) from November 1 through May 15 for protection of winter habitats and species sensitivity during calving season. See Appendix 11 for exceptions, modifications, or waivers.		
Issue: Seasonal Stipulation for Surface Disturbing Activities in Crucial Mule Deer and Elk Habitat				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Restrict oil and gas exploration and development in crucial and high-value mule deer and elk habitats (Maps 3-6 and 3-7) from December 15 through May 15 for protection of winter habitats and species sensitivity during fawning season.	No special stipulation required; however, mitigation may be required for surface disturbing activities in crucial and high-value mule deer and elk habitats (Maps 3-6 and 3-7) from December 15 through April 15.	Restrict surface disturbing activities in crucial mule deer and elk habitats (Maps 3-6 and 3-7) from December 15 through April 15 for protection of winter habitats, unless the action is carried out to enhance habitats for mule deer, elk, and/or other wildlife. See Appendix 11 for exceptions, modifications, or waivers.	Restrict surface disturbing activities in crucial and high-value mule deer and elk habitats (Maps 3-6 and 3-7) from December 15 through April 15 for protection of winter habitats. Grant no exceptions.	
Issue: Seasonal Stipulation for Surface Disturbing Activities in Crucial Desert Bighorn Sheep Habitat				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
No special stipulation required.	No special stipulation required; however, mitigation may be required for surface disturbing activities in crucial	Prohibit surface disturbing activities in crucial Desert bighorn sheep habitat (Map 3-5) from April 15 through June 15 for protection of species sensitivity during lambing season. See Appendix 11 for exceptions, modifications, and waivers.		

Table 2-9. Fish and Wildlife Decisions

	Desert bighorn sheep habitat (Map 3-5) from April 15 through June 15.			
Issue: Special Stipulations for Surface Disturbing Activities in Crucial Pronghorn Habitat				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Prohibit oil and gas exploration and development activities in crucial pronghorn habitat (Map 3-5) from December 1 through April 30 for protection of species sensitivity during fawning season.	No special stipulation required; however, mitigation may be required for surface disturbing activities in crucial pronghorn habitat (Map 3-5) from May 15 through June 15.	Restrict surface disturbing activities in crucial pronghorn habitat (Map 3-5) from May 15 through June 15 for protection of species sensitivity during fawning season. See Appendix 11 for exceptions, modifications, or waivers.		
Issue: Special Stipulation for Surface Disturbing Activities in Riparian and Wetland Habitats				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Prohibit surface disturbing activities within 500 feet of live water.	Prohibit surface disturbing activities within the 100-year floodplain or 330 feet on either side from the centerline, whichever is greater, of streams with intermittent or perennial reaches, resulting in NSO in this area, for protection of habitat for riparian-obligate species.		Prohibit surface disturbing activities within 660 feet of streams with intermittent or perennial reaches, resulting in NSO in this area, for protection of habitat for riparian-obligate species.	
Issue: Reintroduction, Transplantation, Augmentation, and Reestablishment of Wildlife and Fish Species				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
• Cooperate with UDWR and USFWS in reintroducing wildlife species into historic ranges as determined through NEPA analysis. • Consider wildlife	• Analyze UDWR and USFWS proposals to introduce, augment, transplant, and reestablish wildlife species through NEPA evaluation. • Allow introduction, translocation, transplantation, augmentation, and reestablishment of both native and naturalized fish and wildlife species in cooperation and collaboration with UDWR.		• Analyze UDWR and USFWS proposals to introduce, augment, transplant, and reestablish wildlife species through NEPA evaluation. • Allow introductions, translocation, transplantation, augmentation, and reestablishment of native species only in cooperation and collaboration with UDWR.	

Table 2-9. Fish and Wildlife Decisions

transplants of big game species and fish.				
Issue: Management of Raptor Habitat				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Manage raptors as required in current LUPs.	Implement the following direction: "Raptor management will be guided by the use of "Best Management Practices for Raptors and Their Associated Habitats in Utah" (BLM 2006) (Appendix 10), utilizing seasonal and spatial buffers, as well as mitigation, to maintain and enhance raptor nesting and foraging habitat, while allowing other resource uses."			

Wild Horses and Burros

Table 2-10. Wild Horses and Burros Decisions

Desired Outcomes (Goals and Objectives)
• Manage wild burros at appropriate levels in viable, vigorous, and stable populations to ensure a natural ecological balance among wild burro populations, wildlife, livestock, vegetation resources, and other resource values. • Manage for genetic diversity of wild burros within the Canyonlands HMA. • Maintain, enhance, and perpetuate the viable herd's distinguishing characteristics that were typical at the time of the passage of the Wild Free-Roaming Horse and Burro Act or that are identified in population management plans.
Issue: Overall Wild Horses and Burros Management Guidance
Management Actions
Common to the Proposed RMP and Draft RMP Alternatives
Manage wild burro populations for appropriate age and sex ratios, genetic viability, and adoptability, as well as maintaining AML on the established HMA (Map 3-8). Allow wild burro research, as long as other wild horse and burro program goals are met. Wild burro herd research data that may be collected include, but are not limited to, data to determine population size and characteristics, assess herd health, determine herd history and genetic profile (blood and hair sampling, Instruction Memorandum IM # 2002-095 *Gather Policy and Selective Removal Criteria for Wild Horses Program Area: Wild Horse and Burro Program*), and conduct immuno-contraceptive research and monitor results as appropriate. Other data that could be useful in population management would include general characteristics such as age ratios, sex ratios, and color, as well as health characteristics such as pregnancy rates, parasite loading, and the general physical condition of the burros. In addition, genetic sampling would determine the genetic health of the herd. BLM will coordinate with the NPS to address burro trespass issues.

Table 2-10. Wild Horses and Burros Decisions

Issue: Management of the Canyonlands Herd Management Area				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Manage Canyonlands HMA as a wild burro HMA. No AML has been set in existing planning documents (Map 3-8). • Allocate 100 AUMs for wild burros. • Maintain the AML of the Canyonlands HMA at levels to maintain genetic viability.		Manage Canyonlands HMA as a wild burro HMA with an AML of 60–100 (Map 3-8). • Allocate 600 AUMs for wild burros to meet an AML upper limit of 100. • Maintain the AML of the Canyonlands HMA at levels to maintain genetic viability. • Allow introductions of wild burros from other herd areas to maintain genetic viability, given the burros being introduced have characteristics similar to the burros in the Canyonlands HMA.	Manage Canyonlands HMA as a wild burro HMA with an AML of 120–200 (Map 3-8). • Allocate 1,200 AUMs for wild burros to meet an AML upper limit of 200. • Maintain the AML of the Canyonlands HMA at levels to maintain genetic viability.	

Fire and Fuels Management

Table 2-11. Fire and Fuels Management Decisions

Desired Outcomes (Goals and Objectives)				
• Manage fire and fuels to protect life, firefighter safety, property, and critical resource values. • Reduce the threat of wildfire in the Wildland Urban Interface (WUI). • Manage fire and fuels, where appropriate, to restore natural systems to their desired future condition, considering the interrelated social and economic components. • Manage wildland fires to minimize cost considering firefighter and public safety, benefits, and values to be protected, consistent with resource objectives.				
Issue: Fire Management in the Wildland Urban Interface				
Management Actions				
Common to the Proposed RMP and Draft RMP Alternatives				
• Employ WUI Fire and Fuels Management according to national policy to meet vegetation treatment goals. • Work with partners in the WUI in prescribed fires, hazardous fuels reduction, prevention and education, and technical assistance. • Apply Resource Protection Measures for fire management practices to protect natural or cultural resource values as described in Appendix 19 (obtained from the Utah Land Use Plan Amendment for Fire and Fuels Management Finding of No Significant Impact and Decision Record, Table 2.3).				
Issue: Appropriate Management Response, Hazardous Fuels Reduction, and Wildland Fire Use				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Manage fire using a full suite of tools that allows for the graduated movement to a more ecologically sustainable condition and reduction of hazardous fuels.	• Implement appropriate management response (AMR) according to General Risk Categories (GRC), as contained in Appendix 6. The GRCs contain criteria for managing dynamic vegetation communities. Wildland fire use would not be appropriate in the following areas: – Administrative sites – Developed recreation sites – Communication sites – Oil and gas facilities – Mining facilities – Above-ground utility corridors – High-use travel corridors – Crucial wildlife habitats where fire is unwanted – GRC A, such as desert scrub communities. • Prioritize other fire management activities as directed and prioritized in the GRCs. • Adhere to specific fire suppression directions within Potential ACECs as noted in Table 2-21, for protection of identified relevant and important values from irreparable damage.			

Table 2-11. Fire and Fuels Management Decisions

	• Give specific considerations when implementing suppression activities to SSS habitats and cultural resource sites.			
Issue: Hazardous Fuels Reduction				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Reduce hazardous fuels to restore ecosystems; protect human, natural, and cultural resources; and reduce the threat of wildfire to communities.	Manage fire and fuels through treatments conducted on up to 1,472,000 acres over the life of the plan. Use the full range of treatment types (e.g., prescribed and wildland fire use, mechanical, chemical, biological, and cultural treatments). An annual average of 73,600 acres would need to receive treatment to reach the total treatment acreage listed (Table 2-11a). Actual annual treatment acreage would vary depending on conditions, staffing, etc. These acreage figures include all vegetation and fire fuels treatments (Table 2-4).		Manage fire and fuels through treatments conducted on up to 520,000 acres over the life of the plan. Use prescribed fire, intensively treating areas to create properly functioning ecosystems and desired natural communities. The type of treatment would vary depending on case-by-case environmental conditions. Human management would be applied to protect life and property and to ensure ecosystem function in areas currently at risk of losing key ecosystem components following wildfire. (An annual average of 26,000 acres would need to receive treatment to reach the total treatment acreage listed [Table 2-11a]. Actual annual treatment acreage would vary depending on conditions, staffing, etc. These acreage figures include all vegetation and fire fuels treatment [Table 2-4]).	
Issue: Prevention and Mitigation of Wildland Fire				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Prevent human-caused fires through coordination with partners and affected groups and individuals. Use a full range of prevention and mitigation activities.	• Prevent human-caused fires through coordination with partners and affected groups and individuals. Use a full range of prevention and mitigation activities. • Use prioritization criteria contained in the GRCs (Appendix 6).			

Table 2-11. Fire and Fuels Management Decisions

Issue: Emergency Stabilization and Rehabilitation (ESR)				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Undertake ESR efforts to protect and sustain ecosystems, public health, and safety, and to help communities protect infrastructure.		Undertake ESR efforts to protect and sustain ecosystems, public health, and safety, and to help communities protect infrastructure. Prioritize implementation of post-fire emergency stabilization and rehabilitation activities considering the following criteria: • Areas that could pose a threat to life and property • Areas with potential for invasive species invasion, significant ecosystem alteration (e.g., Condition Class 3 areas), and soil stabilization		

Table 2-11a. Estimated Treatment Acreages

Estimated Treatment Acreages		
20 Year Treatment Acreage—Alternatives A and Proposed RMP	**20 Year Treatment Acreage—Alternatives C and D**	**Vegetation Class**
0	0	Other (Non-Vegetated)
58,634	7,329	Mixed Conifer
5,786	1,927	Aspen
171,140	34,228	Ponderosa
19,629	7,852	Oak
16,378	8,189	Mountain Shrub
671,277	223,759	Pinyon-Juniper
343,781	171,891	Sagebrush Steppe
185,515	64,930	Desert Grassland
0	0	Desert Brush
1,472,140	520,105	
Estimated Average Treatment per Year		
73,607	26,005	

Non-WSA Lands with Wilderness Characteristics

Table 2-12. Non-WSA Lands with Wilderness Characteristics Decisions

Desired Outcomes (Goals and Objectives)				
• Protect, preserve, and maintain the wilderness characteristics (appearance of naturalness and outstanding opportunities for solitude or primitive and unconfined recreation) of areas determined to be practicable to manage for the protection of wilderness characteristics by BLM inventory maintenance as appropriate. • Manage primitive and backcountry landscapes to preserve their undeveloped character and scenic quality, and to provide opportunities for primitive and unconfined recreational activities and experiences of solitude, as appropriate.				
Issue: Management of Non-WSA Lands with Wilderness Characteristics				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
No special direction for managing the non-WSA lands with wilderness characteristics is included in the existing LUPs.	Provide no special management direction for protecting the non-WSA lands with wilderness characteristics.	Manage the following 12 non-WSA lands with wilderness characteristic areas (78,600 acres) specifically to maintain their wilderness characteristics: (1) Dirty Devil/French Spring (6,100 acres) (2) Dogwater Creek (3,100 acres) (3) Horseshoe Canyon South (12,200 acres) (4) Jones Bench (2,600 acres) (5) Labyrinth Canyon (2,800 acres) (6) Little Rockies (9,500 acres) (7) Mount Ellen-Blue Hill (3,900 acres) (8) Mount Pennell (4,700 acres) (9) Notom Bench	Same as Alternative A.	Protect the 29 areas (682,600 acres) of non-WSA lands with wilderness characteristics (identified in Chapter 3 and on Map 3-9) through the following land allocations and prescriptions: • Designate as VRM Class I • Manage for primitive and semi-primitive non-motorized recreation • Close to motorized use • Retain land in public ownership • Designate as an Avoidance Area for ROWs • Propose for withdrawal from mineral entry • Close to oil and gas leasing • Close to mineral

		(8,200 acres) (10) Ragged Mountain (7,900 acres) (11) Red Desert (8,900 acres) (12) Wild Horse Mesa (8,700 acres). Protect the 12 areas (78,600 acres) of non-WSA lands with wilderness characteristics through the following land allocations and prescriptions: • Designate as Visual Resource Management (VRM) Class II • Limit motorized use to designated routes • Retain lands in public ownership • Designate as an Avoidance Area for rights-of-way (ROW) • Designate leasing category as no surface occupancy (NSO), no exceptions, waivers, or modifications • Close to mineral material sales • Designate as unavailable for further consideration for coal leasing • Continue maintenance and use of existing facilities • Prohibit private or commercial woodland harvest or seed collection • Healthy Lands Initiative projects could be		material sales • Designate as unavailable for further consideration for coal leasing.

		considered where they improve the overall goals and objectives for managing the wilderness characteristics of these areas • Consider no coal leasing proposals in the 12 (78,600 acres) identified non-WSA lands with wilderness characteristics.		

2.6.2 Resource Uses

Forestry and Woodland Products

Table 2-13. Forestry and Woodland Products Decisions

<table>
<tr><th colspan="5">Desired Outcomes (Goals and Objectives)</th></tr>
<tr><td colspan="5">• Provide forest and woodland products (including fuelwood, timber, posts, pinyon nuts, and Christmas trees) on a sustainable basis.
• Reduce pinyon-juniper encroachment through woodland product use where increased density threatens other resource values.
• Provide opportunities for seed and live plant collecting where and when ecologically feasible.
• Emphasize forest and woodland health.</td></tr>
<tr><th colspan="5">Issue: Overall Management of Forests and Woodlands</th></tr>
<tr><th colspan="5">Management Actions</th></tr>
<tr><th colspan="5">Common to the Proposed RMP and Draft RMP Alternatives</th></tr>
<tr><td colspan="5">• Allow use of forest and woodland species to achieve desired conditions.
• Reforest sites after disturbances.
• Manage forests and woodlands to meet objectives of the Healthy Forest Restoration Act of 2003, including:
– Develop a Forest and Woodlands Management Plan
– Give priority to restoration of destroyed or degraded woodland ecosystems
– Employ commercial uses to improve forest and woodland ecosystem health
– Emphasize partnerships among internal programs and outside agencies for forest and woodland management
– Increase monitoring of forest and woodland conditions
– Emphasize public education on forest and woodland health, fire danger, and resource uses
– Identify, maintain, and restore old-growth forests.</td></tr>
<tr><th colspan="5">Issue: Areas Open to Timber Harvest</th></tr>
<tr><th colspan="5">Management Actions</th></tr>
<tr><th>Alternative N
(No Action)</th><th>Alternative A</th><th>Proposed RMP</th><th>Alternative C</th><th>Alternative D</th></tr>
<tr><td>West of Capitol Reef National Park:
• Manage commercial timber harvest on a case-by-case basis.
East of Capitol Reef National Park:</td><td>Provide for commercial and non-commercial timber harvest where feasible, sustainable, and compatible with restoring, maintaining, or improving forest health.</td><td>Provide for commercial and non-commercial timber harvest where feasible, sustainable, and compatible with restoring, maintaining, or improving forest health.
The 12 non-WSA lands (78,600 acres) with</td><td colspan="2">Allow no commercial timber harvest.</td></tr>
</table>

Table 2-13. Forestry and Woodland Products Decisions

• Continue to prohibit commercial timber harvesting.		wilderness characteristics would be closed to commercial and non-commercial use of forest and woodland products. Exceptions for traditional Native American use may be considered.		
Issue: Areas Open to Woodland Products Harvest: Christmas Trees, Posts, Green Wood Cutting, and Fuelwood				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
West of Capitol Reef National Park: • Allow harvest of dead and down woodland products by permit on a case-by-case basis • Allow green wood cutting in specified areas by permit. **East of Capitol Reef National Park:** • Provide for non-commercial use of woodland products outside WSAs by permit.	Provide for commercial and non-commercial use of forest and woodland products where sustainable and compatible with restoring, maintaining, and improving woodland health, in areas specified by permit. WSAs and suitable WSR corridors would be closed to commercial and non-commercial use of forest and woodland products. Exceptions for traditional Native American use may be considered.	Provide for commercial and non-commercial use of forest and woodland products where sustainable and compatible with restoring, maintaining, and improving woodland health, in areas specified by permit. WSAs, the 12 non-WSA lands with wilderness characteristics (78,600 acres), and suitable WSR corridors would be closed to commercial and non-commercial use of forest and woodland products. Exceptions for traditional Native American use may be considered.	Provide for commercial and non-commercial use of forest and woodland products where sustainable and compatible with restoring, maintaining, and improving woodland health, in areas specified by permit. WSAs and suitable WSR corridors would be closed to commercial and non-commercial use of forest and woodland products. Exceptions for traditional Native American use may be considered.	Provide for commercial and non-commercial use of forest and woodland products where sustainable and compatible with restoring, maintaining, and improving woodland health, in areas specified by permit. WSAs, non-WSA lands with wilderness characteristics (682,600 acres), and suitable WSR corridors would be closed to commercial and non-commercial use of forest and woodland products. Exceptions for traditional Native American use may be considered.
Issue: Management of Seed and Live Plant Collecting				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Allow commercial and non-commercial live plant and seed collecting by permit.	• Allow commercial and non-commercial live plant and seed collecting by permit. • Consider designating	• Allow commercial and non-commercial live plant and seed collecting by permit. • Consider designating	• Allow commercial and non-commercial live plant and seed collection by permit in areas outside WSAs	• Allow no commercial or non-commercial live plant and seed collecting within WSAs, non-WSA lands with

Table 2-13. Forestry and Woodland Products Decisions

	specific seed collecting areas for resource benefits.	specific seed collecting areas for resource benefits. • Allow no commercial or non-commercial live plant and seed collecting within WSAs, non-WSA lands with wilderness characteristics (78,600 acres), and suitable WSR corridors. Exceptions for traditional Native American use may be considered.	and suitable WSR corridors. Exceptions for traditional Native American use may be considered. • Consider designating specific seed collecting areas for resource benefits.	wilderness characteristics (682,600 acres), and suitable WSR corridors. Exceptions for traditional Native American use may be considered. • Consider designating specific seed collecting areas for resource benefits.

Livestock Grazing

Table 2-14. Livestock Grazing Decisions

Desired Outcomes (Goals and Objectives)				
• Provide for the orderly use, improvement, and development of the range for livestock grazing. • Provide for livestock grazing while maintaining rangelands in properly functioning condition. • Maintain healthy, sustainable rangeland ecosystems and restore degraded rangelands to meet Utah's Standards for Rangeland Health and to provide a wide range of public values, such as wildlife habitat, livestock forage, recreation opportunities, clean water, and functional watersheds. • Integrate livestock use and associated management practices with other multiple use needs and objectives to maintain, protect, and improve rangeland health.				
Issue: General Grazing Management				
Management Actions				
Common to the Proposed RMP and Draft RMP Alternatives				
• Monitor and evaluate grazing allotments to maintain or improve rangeland productivity. • Adjust permit terms and conditions (e.g., permitted use, amount of use, season of use, and kind and class of livestock) when grazing permits are renewed, transferred, or as otherwise deemed necessary by site-specific evaluation of monitoring data and environmental analysis. • Use livestock grazing to enhance ecosystem health or mitigate resource problems (e.g., noxious/invasive weed control and hazardous fuel reduction) where supported by site-specific environmental analysis. • During periods of drought, adjust livestock numbers annually based on estimates of the available forage. • Exclude livestock grazing from small areas (such as springs) within allotments that cannot meet Rangeland Health Standards with livestock grazing. • Site-specific management actions that protect riparian areas would be addressed at the project level. • Handle on a case-by-case basis voluntary relinquishment of grazing permits and preference, in whole or in part, by a permittee in writing to the BLM. The BLM would not recognize as valid, relinquishments that are conditional on specific BLM actions, and BLM would not be bound by them. Relinquished permits and the associated preference would remain available for application by qualified applicants after BLM considers whether such action would meet Rangeland Health Standards and would be compatible with achieving LUP goals and objectives. Prior to re-issuance of the relinquished permit, the terms and conditions may be modified to meet RMP goals and objectives and/or site-specific resource objectives. However, upon relinquishment, BLM may determine through a site-specific evaluation and associated environmental analysis that the public lands involved would be better used for other purposes. Grazing may then be discontinued on the allotment through an amendment to the RMP. Any decision issued concerning discontinuance of livestock grazing would not be permanent and may be reconsidered and changed through future LUP amendments and updates.				
Issue: Forage Allocations				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Continue to permit livestock use on those allotments	Permit livestock use on those allotments shown on	Permit livestock use on those allotments shown on Map 2-7 and in Appendix 7 (Table A7-3).		

Table 2-14. Livestock Grazing Decisions

shown on Map 2-7 and in Appendix 7 (Table A7-1). • Acres available for grazing: 1,989,048 • Acres unavailable for grazing: 138,952 • Available AUMs: 146,202	Map 2-6 and in Appendix 7 (Table A7-2). Fourteen allotments comprising 36,950 acres previously unavailable to livestock grazing would again be available to livestock grazing. • Acres available for grazing: 2,025,998 • Acres unavailable for grazing: 102,002 • Available AUMs: 147,281	• Acres available for grazing: 1,989,048 • Acres unavailable for grazing: 138,952 • Available AUMs: 146,202

Issue: Grazing Allotment Boundaries

Management Actions

Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
• Continue to manage Long Hollow, Terza Flat, Deleeuw, and Loa Winter allotments as separate allotments. • Continue to manage Flat Top, King Sheep, and Bicknell Winter allotments as separate allotments. • Manage Cedar Peak, Hare Lake, Smooth Knoll, and Bicknell Spring allotments as separate allotments. • Manage Cyclone and Cyclone Co-Op allotments as separate allotments.	Authorize allotment boundary changes, including combining and splitting allotments, on a case-by-case basis after environmental analysis. Provide for the following allotment combinations: • Combine Long Hollow, Terza Flat, and Deleeuw allotments with the Loa Winter Allotment. • Combine Flat Top and King Sheep allotments with the Bicknell Winter Allotment. • Combine Cedar Peak, Hare Lake, and Smooth Knoll allotments with the Bicknell Spring Allotment. • Combine the Cyclone Allotment with the Cyclone Co-Op Allotment.			

Table 2-14. Livestock Grazing Decisions

Issue: Guidelines and Criteria for Adjusting Allotment-Specific Grazing Management Practices				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Existing LUPs do not specifically address this issue.	**Conversion in Kind of Livestock** Authorize conversion in kind of livestock on a case-by-case basis when justified through environmental analysis. Permittees may be required to provide needed range improvements to support the conversion. A conversion may be justified when it meets the following criteria: • Monitoring studies or other acceptable data support the conversion. • Environmental conditions (e.g., vegetation types, topographic features, and water availability) can accommodate the conversion. • Change in kind of livestock poses no threat to other resources. • A trial change proves acceptable. **Adjusting Livestock Season of Use** Consider adjustments to season of use when resource conditions indicate a change is needed. Conduct appropriate environmental analysis prior to any changes. Resource conditions include: • Physiological requirements (reproduction and maintenance) of desired plant species are not being met. • Range conditions are declining because of season of use. • Conflicts with other resources or uses are identified. Consider the following actions if livestock grazing is contributing to declining range conditions: • Shorten the grazing period • Temporarily suspend use • Implement or change grazing system • Authorize non-use until conditions improve. Authorize permittee requests for changes to livestock season of use when the following conditions are met: • Physiological requirements (e.g., reproduction and maintenance) of desired plants can be met. • On community allotments, all permittees in that allotment agree to the change. • Requested changes do not conflict with other established land uses. • A trial of the change proves acceptable. • Permittees may be required to provide needed range improvements to support changing the season of use. **Adjusting Permitted Use**			

Table 2-14. Livestock Grazing Decisions

<table>
<tr><td></td><td colspan="4">Consider changes to permitted use if:
• Change is supported by monitoring data, field observations, ecological site inventory, or other acceptable data.
• Conflicts with other uses are identified.
• There is a change in public land ownership (increase or decrease).
• Protection of other resources is required.
• Changes are required by 43 CFR 4180 (Rangeland Health regulations).</td></tr>
<tr><td colspan="5">Issue: Administrative Access for Grazing Management</td></tr>
<tr><td colspan="5">Management Actions</td></tr>
<tr><td colspan="5">Common to the Proposed RMP and Draft RMP Alternatives</td></tr>
<tr><td colspan="5">• Continue to allow motorized access to range improvements for allotment management purposes.
• Allow access within WSAs according to IMP.</td></tr>
<tr><td colspan="5">Issue: Managing Domestic Sheep/Wildlife Conflicts</td></tr>
<tr><td colspan="5">Management Actions</td></tr>
<tr><td>Alternative N
(No Action)</td><td>Alternative A</td><td>Proposed RMP</td><td>Alternative C</td><td>Alternative D</td></tr>
<tr><td>Permit domestic sheep grazing in bighorn sheep habitat while following the Guidelines for Domestic Sheep and Goat Management in Native Wild Sheep Habitats.</td><td>Permit domestic sheep grazing in bighorn sheep habitat while following the Guidelines for Domestic Sheep and Goat Management in Native Wild Sheep Habitats.</td><td>Permit no domestic sheep and goat grazing east of Capitol Reef National Park, subject to existing livestock grazing permits.</td><td colspan="2">Permit no domestic sheep and goat grazing in bighorn sheep habitat throughout the lands managed by the RFO, subject to existing livestock grazing permits.</td></tr>
</table>

Recreation

Table 2-15. Recreation Decisions

Desired Outcomes (Goals and Objectives)
• Provide recreational opportunities in a variety of physical, social, and administrative settings, from primitive to near-urban, that allow visitors to have desired recreational experiences and enjoy the resulting benefits. • Provide opportunities for recreational experiences unique to the lands managed by the RFO, consistent with resource capabilities and mandated resource requirements; provide for visitor education and interpretation of the recreational opportunities within the RFO. • Work with local communities to foster recreation and tourism. • Provide for public health, education, and safety through interpretation, facility development, and visitor management. • Maintain important recreational values and sites in federal ownership to ensure a continued diversity of recreation settings, activities, and opportunities.
Issue: Overall Recreation Guidance
Management Actions
Common to the Proposed RMP and Draft RMP Alternatives
Implement the Utah BLM Standards for Rangeland Health and Guidelines for Recreation Management, as follows: • Recognize that various levels of regulations and limits may be necessary, but that restrictions and limitations on public uses should be as minimized gas possible without compromising the primary goal. • Use an on-the-ground presence as a tool to protect public lands. • Use enhanced off-site interpretation, education, and information as a tool to protect public lands. • Where long-term damage by recreational usage is observed or anticipated, limit or control activities through special management tools such as designated campsites, permits, area closures, and limitations on numbers of users and duration of usage. • Revise recreation management plans and RMPs when they prove to be either overly restrictive or inadequate to protect public land health. • Coordinate with other federal and state agencies, county and local governments, and tribal nations in recreation planning and managing traffic, search and rescues operations, trash control and removal, and public safety. • Consider and implement where appropriate, management methods to protect resources while maintaining the quality of the experience of various users. Limitations could include numbers, types, timing, and duration of usage. • Encourage the location of public land recreational activities near population centers and highway corridors by the placement of appropriate visitor use infrastructure. Provide restrooms and other facilities adequate for anticipated uses at designated campgrounds, trailheads, and other areas where recreational users concentrate. • Allow non-commercial dispersed camping without permit, throughout the RFO administered lands, unless directed by other management prescriptions. • Allow no rock climbing within 300 feet of cultural sites or within one-quarter mile of raptor nests during nesting seasons. • Allow no camping within one-half mile of any Mexican spotted owl protected activity center (PAC). • BLM Back Country Byways may be designated in the future as deemed appropriate with site-specific environmental analysis.

Table 2-15. Recreation Decisions

- National Recreation Trails may be designated in the future as deemed appropriate with site-specific environmental analysis.
- Encourage "Leave No Trace" and "Tread Lightly" camping and travel techniques.
- Site-specific management actions that protect riparian areas would be addressed at the project level.

Issue: Management of Extensive Recreation Management Areas (ERMA)

Management Actions

Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Continue managing recreation as directed in current LUPs.	• Identify portions of the decision area not delineated as a SRMA as an ERMA. ERMAs would receive only custodial management (which addresses only activity opportunities) of visitor health and safety, user conflict, and resource protection issues, with no activity-level planning. Therefore, actions within ERMAs would generally be implemented directly from LUP decisions. • Manage the ERMAs to provide a variety of recreational opportunities, including primitive, semi-primitive non-motorized, semi-primitive motorized, roaded natural, and rural. Provide outdoor settings ranging from areas with a high-to-moderate opportunity for solitude and closeness to nature, where visitors should be prepared for a high level of self reliance, challenge, and risk; to areas where visitors have the convenience of facilities and a higher interaction with other users. • Consider limiting recreational access, season of use, and numbers of users, if needed, to protect other resources. • Provide facilities based on needs for resource protection and user demand. Consider site-specific development on a case-by-case basis, ranging from minimal, rustic facilities to larger developments that would require major site modifications. • Manage public lands in the Fiddler Butte, Labyrinth Canyon, Blue Hills, and Little Rockies areas in a primitive, naturally appearing setting for a high probability of experiencing solitude, freedom, closeness to nature, self reliance, challenge, and risk. Interaction and evidence of other users would be low. (In some alternatives, these areas are part of SRMAs.) Achieve this by: – Preserving resources while providing for a sustainable recreational opportunity – Managing access and travel primarily as non-motorized, with motorized travel limited to designated routes (access for people with disabilities would be difficult) – Providing minimum improvements needed for site protection – Providing no on-site interpretative facilities. • Manage public lands adjacent to other federal and state lands to complement the recreational experience on the adjoining lands. • Designate sites and areas appropriate for large group events and camping, including: – Starr Spring campground – McMillan Spring campground – Sandy Creek Overlook (except in Alternative D) – Apple Brush Flat near McMillan Spring road junction – Turkey Haven			

Table 2-15. Recreation Decisions

<table>
<tr><td></td><td colspan="4">– Two sites along Sulphur Creek
– Others as necessary to meet recreation demand and protect resources
• Provide signs, trails, trailhead parking, and staging areas to facilitate the use and enjoyment of the ERMA and to protect visitor health, safety, and resources.
• Maintain and/or improve the Paiute, Great Western, and other motorized trail systems.
• Designate, maintain, and improve a non-motorized trail system.</td></tr>
<tr><th colspan="5">Issue: Establishment and Management of Special Recreation Management Areas (SRMA)</th></tr>
<tr><th colspan="5">Management Actions</th></tr>
<tr><th>Alternative N
(No Action)</th><th>Alternative A</th><th>Proposed RMP</th><th>Alternative C</th><th>Alternative D</th></tr>
<tr><td>Current LUPs identify one SRMA.</td><td colspan="4">• Establish and manage SRMAs, as identified below.
• Manage recreation activities and developments in the SRMA to support SRMA goals and objectives.
• Establish recreation management zones (RMZ) to address specific recreation uses, user types, and site-specific prescriptions during activity planning for each SRMA, except for the Factory Butte SRMA.
• Develop recreation facilities in response to resource management needs appropriate to the intent of the SRMA.</td></tr>
<tr><td>One SRMA, 120 acres
Yuba Reservoir (defer management of Yuba SRMA to Fillmore Field Office (FO) in all alternatives)</td><td>Five SRMAs, 514,500 acres
OHV:
• Factory Butte
• Big Rocks
• Sahara Sands
Dispersed Recreation:
• Dirty Devil
• Otter Creek
(Map 2-8)</td><td>Five SRMAs, 860,390 acres
OHV:
• Factory Butte
• Big Rocks
Dispersed Recreation:
• Henry Mountains
• Dirty Devil
• Capitol Reef Gateway
(Map 2-9)</td><td>Four SRMAs, 930,000 acres
Dispersed Recreation:
• Henry Mountains
• Dirty Devil
• Capitol Reef Gateway
• Sevier Canyon
(Map 2-10)</td><td>Seven SRMAs,1,358,100 acres
Primitive and semi-primitive recreation:
• Henry Mountains
• Dirty Devil
• Capitol Reef Gateway
• E. Fork Sevier River
• San Rafael Swell
• Little Rockies
• Labyrinth Canyon
Dispersed recreation:
• Capitol Reef Gateway
• E. Fork Sevier River
(Map 2-11)</td></tr>
</table>

Table 2-15. Recreation Decisions

Issue: Management of Recreational Opportunities in the E. Fork Sevier River (Including Otter Creek Reservoir)				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Continue managing the area as a part of the ERMA in cooperation with the Utah Division of Parks and Recreation (Otter Creek State Park).	**Otter Creek Reservoir SRMA** Establish the 3,200 acres of public land adjacent to Otter Creek Reservoir as an SRMA (Map 2-8). • Manage the SRMA to provide a roaded natural experience, providing users the opportunity to interact with each other in developed sites while providing some chance of privacy. • Provide a moderate level of access for people with disabilities. • Provide some facilities for user comfort. Allow site modifications if needed. • Provide simple way-side interpretive exhibits.	• Manage the area as a part of the ERMA in cooperation with the Utah Division of Parks and Recreation. • If warranted by demand, enhance and expand recreation opportunities and facilities such as campgrounds, water, restrooms, and other recreation, picnic, and trailhead facilities.	Manage the area as a part of the ERMA in cooperation with the Utah Division of Parks and Recreation.	**East Fork of the Sevier River SRMA** Establish the East Fork of the Sevier River SRMA (59,500 acres). • Manage lands around Otter Creek Reservoir for dispersed recreational uses in cooperation with the Utah Division of Park and Recreation. • Manage non-WSA lands with wilderness characteristics in and around Kingston Canyon for primitive recreation opportunities. • Manage remaining lands for a roaded natural experience, providing users the opportunity to interact with each other in developed sites while providing some chance of privacy. • Manage the East Fork of the Sevier River in cooperation with the UDWR to enhance the blue ribbon fishing opportunities

Table 2-15. Recreation Decisions

				• Enhance, expand, and market recreation opportunities and facilities such as the Paiute ATV Trail, campgrounds, water, restrooms, and other recreation, picnic, and trailhead facilities as a regional destination location.
Continue to manage the area as open to OHV use.	• Limit OHV use in the SRMA to designated routes and trails east of the reservoir. • Provide an OHV open area west of the reservoir.	Limit OHVs to designated routes, according to the area designations shown in Table 2-16.		Close non-WSA lands with wilderness characteristics to OHV use. Elsewhere in the SRMA, limit vehicles to designated routes. Allow permitted access, where needed, to range developments and mining claims as identified in the activity plan.
Not applicable.	Complete an SRMA activity plan within five years of RMP Record of Decision (ROD).	Not applicable.	Not applicable.	Complete an SRMA activity plan within 5 years of RMP ROD.
Issue: Management of Recreational Opportunities in the Factory Butte Area				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Continue managing the Factory Butte area as part of the ERMA.	**Factory Butte SRMA** Identify 199,700 acres of public land as the Factory Butte SRMA (Map 2-8) to provide a motorized recreational experience that involves a high degree of self-reliance, challenge, and risk in a natural setting. • Allow moderate to extensive landscape	**Factory Butte SRMA** Identify 24,400 acres of public land as the Factory Butte SRMA (Appendix 18) to provide a motorized recreational experience that involves a high degree of self-reliance, challenge, and risk in a natural setting. • Allow moderate to extensive landscape	Manage recreation values in the Factory Butte area as part of the ERMA in concert with the Badlands ACEC designation. • Develop no facilities to support recreation activities unless needed to meet ACEC objectives.	**San Rafael Swell SRMA** Identify 127,100 acres of public land in the Factory Butte area as part of the San Rafael Swell SRMA (Map 2-11) for primitive and semi-primitive recreational opportunities. Manage in coordination with the Price FO. • Preserve or retain the

Table 2-15. Recreation Decisions

	modifications. • Provide limited signing and interpretation. • Develop facilities to provide for visitor health and safety and support the objectives of the SRMA.	modifications. • Develop facilities to provide for visitor health and safety and support the objectives of the SRMA. • Establish three RMZs including: – OHV Play Area RMZ (8,500 acres) – Motorized Touring RMZ (11,300 acres) – Landmarks RMZ (4,600 acres) • Designate three OHV open areas as the OHV Play Area RMZ: – Factory Butte (5,800 acres) – Caineville Cove Inn (100 acres) – Swing Arm City (2,600 acres) • Manage the Factory Butte SRMA according to the prescriptions outlined in Appendix 18.		existing character of the landscape. • Develop facilities to support motorized and non-motorized recreation in a dispersed setting and to provide for health and safety, such as restrooms, staging areas, loading facilities, and parking areas. • Manage the SRMA for a medium probability of experiencing solitude, closeness to nature, self-reliance, challenge, and risk in an unmodified and natural appearing environment with low interaction or evidence of other users. • Manage recreational activities to sustain natural resources while meeting social and economic needs, emphasizing the opportunity to experience solitude by recreational vehicle touring, camping, and hiking.
Continue to manage OHV use in accordance with the *Notice of OHV Travel Restriction* for motorized use in the Factory Butte area (Table 2-16).	Designate SRMA as open to OHV use (Map 2-8).	Designate SRMA as open to OHV use in the OHV Play Area RMZ (8,500 acres). Limited to Designated Routes in the Motorized Touring RMZ and Closed to	Close mesa tops to OHV use. Elsewhere in the ACEC, limit OHVs to designated trails to prevent irreparable damage to cultural resources, badlands	Close mesa tops and non-WSA lands with wilderness characteristics to OHV use. Elsewhere in SRMA, limit vehicles to designated routes. Allow permitted

Table 2-15. Recreation Decisions

		motorized use in the Landmarks RMZ. (Map 2-9).	topography, listed species, and scenic values (Map 2-10).	access, where needed, to range developments and mining claims as identified in the activity plan. (Map 2-11).
Not applicable.	Complete an SRMA activity plan within 5 years of the RMP ROD.	*Complete an SRMA activity plan within 5 years of the RMP ROD.* *Implementation level decision.	Not applicable.	Complete an SRMA activity plan within 5 years of the RMP ROD.
Issue: Management of Recreational Opportunities in the Big Rocks Area Near Loa				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Continue to manage the Big Rocks area as part of the ERMA.	**Big Rocks SRMA** Identify Big Rocks SRMA (9,300 acres) and provide for motorized and dispersed recreational use, including competitive motorized recreation events (Map 2-8). • Manage recreational activities to sustain natural resources while meeting social and economic needs, emphasizing the opportunity to experience solitude. • Provide access ranging from moderate to easy through a full range of motorized vehicle types with little self-reliance and a high or moderate level of interaction	**Big Rocks SRMA** Identify Big Rocks SRMA (90 acres) to provide for motorized recreational use, including competitive motorized recreation events (Map 2-9). • Manage motorized recreational activities to sustain natural resources while meeting social and economic needs. • Provide access ranging from moderate to easy through a full range of motorized vehicle types with little self-reliance and a high or moderate level of interaction between users. • Provide signing and	Manage the Big Rocks area as part of the ERMA.	

* *This is an implementation-level decision that cannot be protested under the planning regulations. Please see the cover letter for further information.*

Table 2-15. Recreation Decisions

	between users. • Provide signing and interpretation as needed. • Develop facilities to support motorized and dispersed recreational activities, such as restrooms, staging areas, loading facilities, and parking areas.	interpretation as needed. • Develop facilities to support motorized and dispersed recreational activities, such as restrooms, staging areas, loading facilities, and parking areas.		
Continue managing as an OHV open area.	Manage SRMA as an OHV open area.	Manage SRMA as an OHV open area.	Limit OHVs to designated routes according to Table 2-16.	
Not applicable	Complete an activity plan within 5 years of the RMP ROD.	*Complete an activity plan within 5 years of the RMP ROD.* *Implementation level decision.	Not applicable	Not applicable
Issue: Management of Recreational Opportunities in the Dirty Devil/Robbers Roost Area				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Continue to manage area as part of ERMA.	**Dirty Devil SRMA** Identify the Dirty Devil/Robbers Roost area as an SRMA (290,000 acres, Map 2-8) to provide recreational experiences complementary with the remote and scenic nature and other resource values of the area. (SRMA includes the Dirty Devil WSA, Horseshoe	**Dirty Devil SRMA** Identify the Dirty Devil/Robbers Roost area as an SRMA (290,500 acres, Map 2-9) to provide recreational experiences complementary with the remote and scenic nature and other resource values of the area. (SRMA includes Dirty Devil WSA, Horseshoe	**Dirty Devil SRMA** Identify the Dirty Devil/Robbers Roost area as an SRMA (375,800 acres, Map 2-10) in concert with the Dirty Devil/North Wash ACEC to provide for recreational experiences complementary with the remote and scenic nature and other resource values of	**Dirty Devil SRMA** Identify the Dirty Devil/Robbers Roost area as an SRMA (383,900 acres, Map 2-11) in concert with the Dirty Devil/North Wash ACEC to provide for recreational experiences complementary with the remote and scenic nature and other resource values of

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Table 2-15. Recreation Decisions

	Canyon WSA, Happy Canyon—French Springs WSA, and the Beaver Wash ACEC.) • Manage SRMA consistent with prescriptions identified in the Beaver Wash ACEC and direction provided in the IMP for WSAs. • Manage SRMA for a high probability of experiencing solitude, closeness to nature, self-reliance, challenge, and risk in an unmodified and natural appearing environment with very low interaction or evidence of other users. • Provide opportunities for primitive and semi-primitive, non-motorized recreation within the Dirty Devil River corridor, its tributaries, and the Horseshoe Canyon drainage. • Provide semi-primitive motorized activity on designated routes. • Provide non-motorized access by means of trails, cross-country travel, and some primitive roads (access for people with	Canyon WSA, and the Happy Canyon—French Springs WSA.) • Manage the portions of the WSAs within the SRMA according to the IMP. • Manage the portions of the Dirty Devil/French Springs non-WSA lands with wilderness characteristics in accordance with the management prescriptions identified for these areas. • Manage SRMA for a high probability of experiencing solitude, closeness to nature, self-reliance, challenge, and risk in an unmodified and natural appearing environment with very low interaction or evidence of other users. • Provide opportunities for primitive and semi-primitive, non-motorized recreation within the Dirty Devil River corridor, its tributaries, and the Horseshoe Canyon drainage. • Provide semi-primitive motorized activity on designated routes.	the area, notably the ACEC values. (SRMA includes the Dirty Devil WSA, Horseshoe Canyon WSA, Fiddler Butte WSA, Happy Canyon—French Springs WSA, proposed Dirty Devil/North Wash ACEC and the suitable Dirty Devil River and tributary WSR segments.) • Manage SRMA consistent with prescriptions identified in the Dirty Devil North Wash ACEC, with direction provided in the IMP for WSAs, and with protection for WSR outstandingly remarkable values. • Manage SRMA for a high probability of experiencing solitude, closeness to nature, self-reliance, challenge, and risk in an unmodified and natural appearing environment with very low interaction or evidence of other users. • Provide non-motorized access on trails, cross-country and some primitive roads (access for people with disabilities would be most difficult). • Provide no site developments or only	the area, notably the ACEC values. (SRMA includes the Dirty Devil WSA, Horseshoe Canyon WSA, Fiddler Butte WSA, Happy Canyon—French Springs WSA, proposed Dirty Devil/North Wash ACEC and the suitable Dirty Devil River and tributary WSR segments.) • Manage SRMA consistent with: – Prescriptions identified in the Dirty Devil North Wash ACEC. – Direction provided in the IMP for WSAs. – Protection of WSR outstandingly remarkable values. – Protection of non-WSA lands with wilderness characteristics. • Manage SRMA for a high probability of experiencing solitude, closeness to nature, self-reliance, challenge, and risk in an unmodified and natural appearing environment with very low interaction or evidence of other users. • Provide non-motorized access on trails, cross-country and some primitive roads. (Access for people with

Table 2-15. Recreation Decisions

	disabilities would be most difficult). • Provide no site developments or only the minimum required for site protection, considering user comfort secondarily. • Provide no on-site interpretive facilities. • Manage to allow natural processes to achieve self-sustaining systems.	• Provide non-motorized access by means of trails, cross-country travel, and some primitive roads. (Access for people with disabilities would be most difficult.) • Provide no site developments or only the minimum required for site protection, considering user comfort secondarily. • Provide no on-site interpretive facilities. • Manage to allow natural processes to achieve self-sustaining systems.	the minimum required for site protection, with user comfort secondary in consideration. • Provide no on-site interpretive facilities. • Manage to allow natural processes to achieve self-sustaining systems.	disabilities would be most difficult.) • Provide no site developments or only the minimum required for site protection, with user comfort considered secondarily. • Provide no on-site interpretive facilities. • Manage to allow natural processes to achieve self-sustaining systems.
Manage OHVs according to existing area designations (Map 2-12).	Limit OHVs to designated routes.	Close canyons and portions of WSAs to OHV use. Limit OHVs to designated routes elsewhere (Table 2-16).	Close WSAs and WSR segments to OHV use except for limited designation in Poison Springs/North Hatch Canyon road corridor. Limit OHV use to designated routes in the portion of the SRMA outside the ACEC (Table 2-16).	Close WSAs and non-WSA lands with wilderness characteristics to vehicle use. Elsewhere in the SRMA, limit vehicles to designated roads and trails. Allow permitted access, where needed, to range developments and mining claims as identified in the activity plan (Table 2-16).
Continue dealing with recreation use conflicts on a case-by-case basis.	Consider limiting recreational activities if they conflict with other resources or users, if necessary. (Limitations could include numbers of people, season of use, or area of use.)			
Not applicable	• Develop an activity plan for the SRMA within 5 years to address developed facilities, special recreation permits (SRP), and special rules for protecting resources such as regulating campfire use, camping, sanitation, backcountry permits, group size, spatial and seasonal restrictions. *Implementation level decision.			

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Table 2-15. Recreation Decisions

	• Continue to issue current SRPs according to site-specific analysis already completed and according to existing permit stipulations. (SRPs are currently in place for commercial uses such as canyoneering, rock climbing, backpacking, hiking, guided hunting, and vehicle tours.) • Prior to completing the activity plan, issue additional similar SRPs, subject to the following stipulations: – Within one-half mile of canyon rims and below the rim, limit group size to 12 or fewer. Allow no commercial or organized group larger than 12 to operate in this area. – Allow only one commercial group to occupy the same side of the canyon at any one time. – Review itineraries prior to each operating season. – Allow no camping within one-half mile of Mexican spotted owl protected activity centers. Require all activities be consistent with the guidelines in the Mexican spotted owl recovery plan. – Allow no camping within the 100-year floodplain or 330 feet on either side from the centerline, whichever is greater, of any spring or water sources in Desert bighorn sheep use areas during the lambing season (April 15–June 15). – Stipulate additional requirements, if needed, to protect sensitive species and their critical habitats. • Consider developing facilities to support the objectives of the SRMA, to provide for visitor health and safety, and for resource protection. • Locate facilities such as trailheads, instructional signs, group sites, and parking areas on the bench lands near existing access roads. • Address changes to OHV route designations, if needed. • Conduct environmental analysis on SRP proposals that do not meet the criteria above or that are different than existing SRPs.			
Continue managing oil and gas leasing according to existing LUPs and applicable law (Map 2-35).	Manage oil and gas leasing in SRMA (outside WSA) as follows: • Lease remaining areas subject to CSU and/or timing limitations. (Map 2-36)	Manage oil and gas leasing in SRMA (outside WSAs) as follows: • Lease VRM Class II areas and canyon rims within the viewshed of all canyons (approximately one-quarter mile), with major constraints (NSO). • Lease the remainder of the SRMA subject to CSU and/or timing limitations. (Map 2-37)	Manage oil and gas leasing in SRMA (outside WSAs, WSR corridors, and VRM Class II areas within Poison Springs Canyon and Happy Canyon) as follows: • Lease the remaining VRM Class II areas and canyon rims within the viewshed of all canyons (approximately one-quarter mile) with major constraints (NSO). • Lease the remainder of the SRMA subject to CSU and/or timing limitations.	Manage oil and gas leasing in SRMA (outside WSAs, WSR corridors and non-WSA lands with wilderness characteristics) as follows: • Lease the remainder of the SRMA as NSO or subject to CSU and/or timing limitations. (Map 2-39)

Table 2-15. Recreation Decisions

			(Map 2-38)	
Issue: Management of Recreational Opportunities on Lands Adjacent to Capitol Reef National Park				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Continue managing the Capitol Reef Gateway area as part of the ERMA. In addition: • Manage the Fremont Gorge WSA under the IMP. • Manage the eligible Fremont Gorge wild river segment to protect its outstandingly remarkable values.	Manage the Capitol Reef Gateway area as part of the ERMA. In addition: • Manage the Fremont Gorge WSA under the IMP.	**Capitol Reef Gateway SRMA** Identify the Capitol Reef Gateway as an SRMA (12,800 acres, Map 2-9) to manage recreation opportunities associated with Capitol Reef National Park. SRMA boundary includes the Fremont Gorge WSA and the suitable Fremont Gorge wild river segment. • Manage the Fremont Gorge WSA under the IMP. • Manage the Fremont Gorge suitable wild river segment to protect its outstandingly remarkable values. • Manage the Capitol Reef Gateway SRMA for a moderate probability of experiencing solitude, closeness to nature and tranquility, high degree of self-reliance, challenge, and risk in a predominately natural-appearing environment with low interaction but often evidence of other	**Capitol Reef Gateway SRMA** Identify the Capitol Reef Gateway as an SRMA (12,800 acres, Map 2-10) to manage recreation opportunities associated with Capitol Reef National Park. SRMA boundary includes Fremont Gorge WSA, the suitable wild river segment of the Fremont River, and the Fremont Gorge Cockscomb potential ACEC. • Manage appropriate portions of the SRMA in concert with the Fremont Gorge/Cockscomb ACEC. • Manage the Fremont Gorge WSA under the IMP. • Manage the Fremont Gorge eligible wild river segment to protect its outstandingly remarkable values. • Manage the Capitol Reef Gateway SRMA for a moderate probability of experiencing solitude,	**Capitol Reef Gateway SRMA** Identify the Capitol Reef Gateway as an SRMA (168,800 acres, Map 2-11) to manage recreation opportunities associated with Capitol Reef National Park. SRMA boundary includes Fremont Gorge WSA, the suitable wild river segment of the Fremont River, portions of the Fremont Gorge Cockscomb potential ACEC and non-WSA lands with wilderness characteristics adjacent to the east boundary of the park. • Manage appropriate portions of the SRMA in concert with the Fremont Gorge/Cockscomb ACEC. • Manage the Fremont Gorge WSA under the IMP. • Manage the Fremont Gorge eligible wild river segment to protect its outstandingly remarkable values. • Protect non-WSA lands

Table 2-15. Recreation Decisions

		users. • Provide access into the area through motorized and non-motorized routes. (Access for people with disabilities would be difficult.) • Allow facilities to reduce resource impacts, including campgrounds, picnic areas, restrooms, parking and staging areas, and interpretive facilities. • Explore concession opportunities for management and development of additional facilities.	closeness to nature and tranquility, high degree of self-reliance, challenge, and risk in a predominately natural-appearing environment with low interaction but often evidence of other users. • To facilitate access into the area and staging apply a higher level of interaction with visitors; allow travel through the interior using non-motorized means on trails or cross-country. (Access for people with disabilities would be difficult.) • Provide no interior site developments and only the minimum required for site protection. • Provide no on-site interpretation facilities.	with wilderness characteristics. • Manage the Capitol Reef Gateway SRMA for a moderate probability of experiencing solitude, closeness to nature and tranquility, high degree of self-reliance, challenge, and risk in a predominately natural-appearing environment with low interaction but often evidence of other users. • To facilitate access into the area and staging apply a higher level of interaction with visitors; allow travel through the interior using non-motorized means on trails or cross-country, (access for people with disabilities would be difficult.) • Provide no interior site developments and only the minimum required for site protection. • Provide no on-site interpretation facilities.
Continue managing OHV use according to current LUPs.	Manage OHV use according to designations in Table 2-16.	• Close the Fremont Gorge WSA and Fremont Gorge wild river corridor to OHV use. • Limit OHVs to	• Close the Fremont Gorge WSA, Fremont Gorge wild river corridor, and VRM Class II areas to OHV use.	• Close the Fremont Gorge WSA, Fremont Gorge wild river corridor, and non-WSA lands with wilderness characteristics to OHV

Table 2-15. Recreation Decisions

		designated routes elsewhere.	• Limit OHVs to designated routes elsewhere.	use. • Elsewhere, limit OHVs to designated routes. Allow permitted access, where needed, to range developments and mining claims as identified in the activity plan.
Continue managing oil and gas leasing according to existing LUPs and applicable law (Map 2-35).	Manage oil and gas leasing as follows: • Close to oil and gas leasing the portion of the SRMA in the Fremont Gorge WSA. • Lease the portion of the SRMA in the Fremont Gorge wild river corridor as open to oil and gas leasing subject to major constraints (NSO). (Map 2-36)	Manage oil and gas leasing as follows: • Close to oil and gas leasing the portion of the SRMA in the Fremont Gorge WSA and the Fremont Gorge wild river corridor. • Lease the remainder of the SRMA subject to CSU and/or timing limitations. (Map 2-37)	Manage oil and gas leasing as follows: • Close to oil and gas leasing the portion of the SRMA in the Fremont Gorge WSA. (Map 2-38)	Manage oil and gas leasing as follows: • Close to oil and gas leasing the portion of the SRMA in the Fremont Gorge WSA. (Map 2-39)
Not applicable.		*Complete a SRMA activity plan within 5 years of RMP ROD.* *Implementation level decision		
Issue: Management of Recreational Opportunities in the Sahara Sands Area				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Continue managing Sahara Sands as part of the ERMA.	**Sahara Sands SRMA** Identify Sahara Sands SRMA (12,300 acres) as indicated on Map 2-8. • Manage for a roaded natural recreational	Manage Sahara Sands as part of the ERMA.		

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Table 2-15. Recreation Decisions

	opportunity providing users the opportunity to interact with others in developed sites, with some chance of privacy. • Provide a managed OHV recreation experience, including cross-country all-terrain travel. • Develop facilities for user comfort and convenience (as opposed to site protection) to promote and enhance recreation experience as a managed open area. This could include development of parking and staging areas, restrooms, and instructional signing, and could involve moderate or even heavy site modifications. • Explore concession opportunities for management and operation of recreation activity in the area.	
Continue managing as open to OHV use.	Designate as an OHV open area.	Manage OHV use according to area designations in Table 2-16.
Not applicable.	Complete an SRMA activity plan within 5 years of RMP ROD.	Not applicable.

Table 2-15. Recreation Decisions

Issue: Management of Recreational Opportunities in the Henry Mountains				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Continue to manage the Henry Mountains as part of the ERMA. • Manage WSAs according to the IMP. • Manage Bull Creek Archaeological District to protect cultural resource values.	Manage the Henry Mountains as part of the ERMA. • Manage WSAs according to the IMP. • Manage Bull Creek Archaeological District to protect cultural resource values.	**Henry Mountains SRMA** Identify a Henry Mountains SRMA (532,600 acres, Map 2-9). Area includes the Mount Ellen–Blue Hills WSA, Bull Mountain WSA, Mount Pennell WSA, Mount Hillers WSA, and Bull Creek Archaeological District. • Manage WSAs according to the IMP. • Manage Bull Creek Archaeological District to protect cultural resource values. • Emphasize opportunities for a combination of semi-primitive non-motorized and motorized recreational experiences in a natural or predominately natural setting with a high or very high probability of experiencing solitude, closeness to nature, self-reliance, challenge, and risk (interactions between users would be low with minimal evidence of other users). • Provide facilities	**Henry Mountains SRMA** Identify a Henry Mountains SRMA (533,900 acres, Map 2-10). Area includes the Mount Ellen–Blue Hills WSA, Bull Mountain WSA, Mount Pennell WSA, Mount Hillers WSA, and Bull Creek Archaeological District. • Manage WSAs according to the IMP. • Manage Bull Creek Archaeological District to protect cultural resource values. • Manage the SRMA in concert with the Henry Mountains ACEC. • Emphasize opportunities for a combination of semi-primitive non-motorized and motorized recreational experiences in a natural or predominately natural setting with a high or very high probability of experiencing solitude, closeness to nature, self-reliance, challenge, and risk (interactions between users would be low with minimal	**Henry Mountains SRMA** Identify a Henry Mountains SRMA (479,500 acres, Map 2-11). Area includes the Mount Ellen–Blue Hills WSA, Bull Mountain WSA, Mount Pennell WSA, Mount Hillers WSA, and Bull Creek Archaeological District. • Manage WSAs according to the IMP. • Manage Bull Creek Archaeological District to protect cultural resource values. • Protect non-WSA lands with wilderness characteristics. • Manage the SRMA in concert with the Henry Mountains ACEC. • Emphasize opportunities for a combination of semi-primitive non-motorized and motorized recreational experiences in a natural or predominately natural setting with a high or very high probability of experiencing solitude, closeness to nature,

Table 2-15. Recreation Decisions

		needed to protect resources and provide for visitor safety. • Provide signs, trails, trailhead parking, and staging areas to facilitate the use and enjoyment of the SRMA and protection of resources. • Maintain and improve non-motorized trails, including: – Panorama Knoll – Mount Ellen – Burro Wash – Cottonwood Wash – Sheets Gulch – Five Mile Wash. • Designate areas for large group events and camping, including: – Starr Springs Campground – McMillan Spring Overlook – Sandy Creek Overlook – Apple Brush Flat – Turkey Haven.	evidence of other users). • Provide facilities needed to protect resources and provide for visitor safety. • Provide signs, trails, trailhead parking, and staging areas to facilitate the use and enjoyment of the SRMA and protection of resources. • Maintain and improve non-motorized trails, including: – Panorama Knoll – Mount Ellen – Burro Wash – Cottonwood Wash – Sheets Gulch – Five Mile Wash. • Designate areas for large group events and camping, including: – Starr Springs Campground – McMillan Spring Overlook – Sandy Creek Overlook – Apple Brush Flat – Turkey Haven.	self-reliance, challenge, and risk (interactions between users would be low with minimal evidence of other users). • Provide facilities needed to protect resources and provide for visitor safety. • Provide signs, trails, trailhead parking, and staging areas to facilitate the use and enjoyment of the SRMA and protection of resources. • Maintain and improve non-motorized trails, including: – Panorama Knoll – Mount Ellen – Burro Wash – Cottonwood Wash – Sheets Gulch – Five Mile Wash. • Designate areas for large group events and camping, including: – Starr Springs Campground – McMillan Spring Overlook – Sandy Creek Overlook – Apple Brush Flat – Turkey Haven.

Table 2-15. Recreation Decisions

Continue OHV area designations from current LUPs.	Manage according to area designations in Table 2-16.	Manage according to area designations in Table 2-16.	Manage according to area designations in Table 2-16.	Close WSAs and non-WSA lands with wilderness characteristics to motorized vehicle use. Elsewhere, limit vehicles to designated routes. Allow permitted access, where needed, to range developments and mining claims as identified in the activity plan.
Not applicable.		*Complete an SRMA activity plan within 5 years of the RMP ROD.* *Implementation level decision.		
Issue: Management of Recreational Opportunities in the Sevier Canyon Area				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Continue to manage Sevier Canyon as part of the ERMA.			**Sevier Canyon SRMA** Identify a Sevier Canyon SRMA (7,500 acres, Map 2-10.) • Manage the SRMA to protect the scenic values in and around Sevier Canyon. • Manage the SRMA in concert with the Sevier Canyon ACEC. • Provide opportunities for semi-primitive motorized and non-motorized recreation.	Continue to manage Sevier Canyon as part of the ERMA.
Continue OHV area designations from current LUPs.	Manage OHV use according to area designations in Table 2-16.	Limit OHV use to designated routes.		

* *This is an implementation-level decision that cannot be protested under the planning regulations. Please see the cover letter for further information.*

Table 2-15. Recreation Decisions

Not applicable			Complete an SRMA activity plan within 5 years of the RMP ROD.	Not applicable.
Issue: Management of Recreational Opportunities in Horseshoe Canyon				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Continue to manage as part of the ERMA.	**Dirty Devil SRMA** Manage as part of the Dirty Devil SRMA (see above)			**Labyrinth Canyon SRMA** • Manage 75,300 acres in the Horseshoe Canyon area as part of the Labyrinth Canyon SRMA in cooperation with the Price FO (Map 2-11) for primitive and semi-primitive recreational opportunities. • To facilitate access into the area and staging apply a higher level of interaction with visitors; allow travel through the interior using non-motorized means on trails or cross- country. • Provide no interior site developments and only the minimum required for site protection elsewhere. • Manage SRMA for a high probability of experiencing solitude, closeness to nature, self-reliance, challenge, and risk in an unmodified and natural appearing environment

Table 2-15. Recreation Decisions

		with very low interaction or evidence of other users. • Provide non-motorized access on trails, cross-country, and some primitive roads. • Provide no on-site interpretation facilities.
Manage OHVs per direction in existing LUP.	Manage OHVs per management direction in the Dirty Devil SRMA (above) and Table 2-16.	• Close WSAs and non-WSA lands with wilderness characteristics to OHVs. Elsewhere, limit vehicles to designated routes (Table 2-16). • Allow permitted access, where needed, to range developments and mining claims as identified in the activity plan.
Not applicable	*Complete an SRMA activity plan within 5 years of the RMP ROD.* *Implementation level decision.	

Issue: Management of Recreational Opportunities in the Little Rockies

Management Actions

Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Continue to manage as part of the ERMA.				**Little Rockies SRMA** • Manage the 64,000 acres of the Little Rockies SRMA for primitive and semi-primitive recreational opportunities (Map 2-

* *This is an implementation-level decision that cannot be protested under the planning regulations. Please see the cover letter for further information.*

Table 2-15. Recreation Decisions

		11). • To facilitate access into the area and staging, apply a higher level of interaction with visitors; allow travel through the interior using non-motorized means on trails or cross-country (access for people with disabilities would be difficult) • Provide no interior site developments and only the minimum required for site protection and public safety elsewhere. • Manage the SRMA in coordination with National Natural Landmark values. • Preserve or retain the existing character of the landscape. • Manage SRMA for a high probability of experiencing solitude, closeness to nature, self-reliance, challenge, and risk in an unmodified and natural appearing environment with very low interaction or evidence of other users.
Manage OHVs in accordance with direction in existing LUP.	Manage OHVs in accordance with management direction in Table 2-16.	• Close WSAs and non-WSA lands with wilderness

Table 2-15. Recreation Decisions

				characteristics to OHVs. • Allow permitted access, where needed, to range developments and mining claims as identified in the activity plan.
Not applicable.				Complete an SRMA activity plan within 5 years of the RMP ROD.
Issue: Management of Recreational Opportunities Around Yuba Reservoir				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Continue implementing the current *Yuba Reservoir Management Plan*.	Implement the *Yuba Reservoir Management Plan*, as revised by the Fillmore FO.			
Issue: Overall Special Recreation Permit (SRP) Guidance				
Management Actions				
Common to the Proposed RMP and Draft RMP Alternatives				
Permit no competitive events in WSAs.				
Issue: Criteria for Commercial SRPs				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Current plans provide no guidance on SRPs. Issue SRPs on a case-by-case basis.	Authorize commercial use permits that provide recreational opportunities, enhance recreational experiences, and protect resources on a case-by-case basis, subject to environmental analysis.			

Table 2-15. Recreation Decisions

Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Issue: Criteria for Competitive SRPs				
Management Actions				
Current plans provide no guidance on competitive events.	• Authorize motorized and non-motorized competitive events consistent with OHV area and route designations on a case-by-case basis, subject to environmental analysis. • Permit no competitive events in the Dirty Devil/Robbers Roost SRMA.			
Issue: Criteria for Organized Group SRPs				
Management Actions				
Current plans provide no guidance on regulating organized groups.	Require SRPs for organized groups outside designated large group areas meeting any *one* of the following criteria: • Group includes 50 or more participants. • Group uses 10 or more vehicles.			
Issue: Criteria for Vending				
Management Actions				
Current plans provide no guidance on vending.	• Authorize vending on a case-by-case basis subject to environmental analysis in conjunction with organized events or when the vending is necessary to support protection of resources or recreational use. • Authorize vending permits for uses that enhance recreational experiences.	• Authorize vending on a case-by-case basis subject to environmental analysis in conjunction with organized events or when the vending is necessary to support protection of resources or recreational use. • Authorize vending permits for uses that enhance recreational experiences. • Authorize no vending along scenic byways and backways.	• Allow no vending in conjunction with organized events. • Authorize no vending along scenic byways and backways.	

Travel Management

Table 2-16. Travel Management Decisions

Desired Outcomes (Goals and Objectives)				
• Maintain existing access, where needed and allowed, to meet public and administrative needs, including acquiring or maintaining necessary access across non-Federal land. • Continue compatible traditional, current, and future use of the land by establishing a route system that contributes to protection of sensitive resources, accommodates a variety of uses, minimizes user conflicts, and is sustainable. • Consider public access, resource management, and regulatory needs through transportation planning. • Coordinate OHV management with other agencies where possible (USFS, NPS, State of Utah, counties, and communities).				
Issue: OHV Area Designations				
Management Actions				
Common to the Proposed RMP and Draft RMP Alternatives				
• The BLM, in preparing its RMP designations and its implementation-level travel management plans, is following policy and regulation authority found at: 43 C.F.R. Part 8340; 43 C.F.R. Subpart 8364; and 43 C.F.R. Subpart 9268. • Where the authorized officer determines that OHVs are causing or would cause considerable adverse impacts, the authorized officer shall close or restrict such areas. The public would be notified. • The BLM could impose limitations on types of vehicles allowed on specific designated routes if monitoring indicates that a particular type of vehicle is causing disturbance to the soil, wildlife habitat, cultural or vegetative resources, especially by off-road travel in an area that is limited to designated routes. • Site-specific management actions that protect riparian areas would be addressed at the project level. • Designate WSAs as closed or limited to designated ways for OHV use (Table 2-19, WSA decisions for details). • If OHV use in areas designated as open or limited causes threats or adverse impacts to resources, take appropriate steps, including, but not limited to, use restrictions or closures, installation of additional signs and barricades, restoration of affected areas, etc.				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Continue existing OHV area designations as follows (Map 2-12): • Open: 1,636,400 acres • Limited: 277,600 acres – Existing routes: 271,000 acres – Designated routes: 4,900 acres	Provide motorized access to the public lands with the minimum restrictions needed to protect other resources. Designate areas as follows (Map 2-13): • Open: 449,000 acres • Limited: 1,679,000 acres	Balance motorized access to public lands with other resource and resource use needs. Designate areas as follows (Map 2-14): • Open: 9,890 acres • Limited: 1,908,210 acres • Closed: 209,900 acres.	Restrict motorized access to public lands to protect other resources and resource uses. Designate areas as follows (Map 2-15): • Open: 0 acres • Limited: 1,445,000 acres • Closed: 683,000 acres.	Restrict motorized access to public lands to protect other resources and resource uses. Designate areas as follows (Map 2-16): • Open: 0 acres • Limited: 972,800 acres • Closed: 1,155,200 acres.

Table 2-16. Travel Management Decisions

– Maintained routes: 1,700 acres • Closed: 214,000 acres. Continue to manage OHV use in accordance with the *Notice of OHV Travel Restriction* for motorized use in the Factory Butte Area, published September 20, 2006 (2,602 acres open to OHV use, 142,023 acres limited to designated routes, and 3,843 acres of North Caineville Mesa closed to OHV use). This restriction will remain in effect until the RFO RMP becomes final.	• Closed: 0 acres.			
Issue: Designation of Managed Open Areas				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Continue to manage existing open areas.	Designate the following managed open areas: • **Ticaboo Play Area** (19,000 acres. Cane Spring Desert east of Ticaboo)—Designate and manage as an OHV open area to accommodate existing use and growth, provide alternative modes of recreation adjacent to Glen Canyon National Recreation Area (NRA), and provide opportunities for economic development.	Designate the following managed open areas: • **Factory Butte Play Area** (5,800 acres)—Designate and manage as an OHV open area to provide a unique OHV riding experience on Mancos shale badlands to accommodate existing use and future growth. • **Swing Arm City Play Area** (2,600 acres)—Designate and manage as an OHV open area. • **Caineville Cove Inn**	Designate no OHV open areas.	

Table 2-16. Travel Management Decisions

	• **Sahara Sands Play Area** (12,000 acres. Northeast of Hwy 95/276 junction)—Designate and manage as an OHV open area to provide a sand dune riding opportunity, accommodate existing use and growth, provide alternative modes of recreation adjacent to Glen Canyon NRA, and provide opportunities for economic development. • **Roost Play Area** (19,000 acres. Northwest of Antelope Valley)—Designate and manage as an OHV open area to provide a sand dune riding opportunity and to accommodate existing use and future growth. • **Factory Butte Play Area** (200,000 acres. Near Caineville and Notom)—Designate and manage as an OHV open area to provide a Mancos shale riding opportunity and to accommodate existing use and future growth. • **Miners Mountain** (9,500 acres. Southeast	**Play Area** (100 acres)— Designate and manage as an OHV open area. • **Big Rocks Trials Play Area** (90 acres)—Designate and manage as an OHV open area to provide trials motorcycle/rock crawling OHV recreational opportunity. • **Glenwood Play Area** (1,000 acres)—Designate as an OHV open area and manage as a community OHV area. • **Aurora Play Area** (300 acres)—Designate as an OHV open area and manage as a community OHV area.	

Table 2-16. Travel Management Decisions

	of Torrey)—Designate and manage as an OHV open area to accommodate dispersed camping, prospecting, firewood cutting, game retrieval, and other traditional uses of the land. • **Beas Lewis Flat** (4,500 acres. East of Torrey)—Designate and manage as an OHV open area to accommodate dispersed camping, prospecting, firewood cutting, game retrieval, and other traditional uses of the land. • **Big Rocks Dispersed Recreation Area** (9,000 acres. South of Loa)—Designate and manage as an OHV open area to accommodate trials motorcycle/rock crawling use and dispersed camping. • **Dry Wash** (6,500 acres. East of Antimony)—Designate and manage as an OHV open area to accommodate dispersed camping, prospecting, firewood cutting, game retrieval and other traditional uses of the land.		

Table 2-16. Travel Management Decisions

	• **Hunter Spring** (4,500 acres. West of Antimony)—Designate and manage as an OHV open area to accommodate dispersed camping, prospecting, firewood cutting, game retrieval, and other traditional uses of the land. • **Otter Creek Reservoir** (1,000 acres. Public land around the reservoir)—Designate and manage as an OHV open area west of the reservoir to accommodate dispersed camping and access to Otter Creek Reservoir and nearby OHV trails. • **Antelope Range/Kingston Canyon** (102,000 acres. Southern Sevier County and western Piute County)—Designate and manage as an OHV open area to accommodate prospecting, firewood cutting, game retrieval, dispersed camping, and other traditional uses of the land. • **Glenwood Play Area** (3,500 acres. East of Glenwood)—Designate		

Table 2-16. Travel Management Decisions

	as an OHV open area and manage as a community OHV area. • **Richfield to Aurora Play Area** (7,000 acres. West of I-70)—Designate as an OHV open area and manage as a community OHV area. • **Rocky Ford Play Area** (12,500 acres. East of Rocky Ford Reservoir)—Designate as an OHV open area and manage as a community OHV area. • **White Hills Play Area** (16,500 acres. North of Aurora.)—Designate as an OHV open area and manage as a community OHV area. • **Fayette Play Area**—(4,500 acres. West of Fayette)—Designate as an OHV open area and manage as a community OHV area. • **Salina to Mayfield** (12,500 acres. North and east of Salina and west of Mayfield)—Designate as an OHV open area and manage as a community OHV area. • **Gunnison Reservoir** (5,500 acres. West of		

Table 2-16. Travel Management Decisions

	Gunnison Reservoir)—Designate and manage as an OHV open area to provide access to the west side of the reservoir and an associated open OHV area.			
Issue: Management of OHV Play Areas Adjacent to Communities				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Consider and promote leasing the identified OHV open areas near communities such as Caineville, Glenwood, Aurora, and Loa (e.g. Big Rocks SRMA) under Recreation and Public Purposes Act (R&PP) authorities to encourage local management of OHV play areas. Generally these would include areas with existing surface disturbance. Requests would be considered on a case-by-case basis, subject to an environmental analysis			Consider no requests for R&PP leases for OHV open play areas.	
Issue: Designation of Areas as Closed to All Motorized Vehicular Traffic				
Management Actions				
Common to the Proposed RMP and Draft RMP Alternatives				
• Prohibit all motorized travel in closed areas, with the following exceptions: – For emergency and other purposes as authorized under 43 CFR 8340.0-5(a)(2),(3),(4) and (5); – Minimum use necessary to exercise a valid existing right or authorized use.				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Continue existing closed areas. (Map 2-12) • **WSAs:** To prevent impairment of the areas' suitability for preservation as wilderness. – Little Rockies WSA – Portions of the Dirty Devil, Fiddler Butte, Mount Ellen/Blue Hills, and Mount	Close no areas to motorized use. (Map 2-13)	Close the following areas to motorized use. (Map 2-14) • **WSAs:** To prevent impairment of the areas' suitability for preservation as wilderness. – Little Rockies WSA – Portions of the Dirty Devil, Fiddler Butte, Fremont Gorge, French	Close the following areas to motorized use. (Map 2-15) • **WSAs:** All WSAs, to prevent impairment of the areas' suitability for preservation as wilderness. • **WSRs:** All segments proposed to protect outstandingly remarkable river-related values. (Refer to Table	Close the following areas to motorized use. (Map 2-16) • **WSAs:** All WSAs, to prevent impairment of the areas' suitability for preservation as wilderness. • **Non-WSA Lands with Wilderness Characteristics:** All non-WSA lands with wilderness

Table 2-16. Travel Management Decisions

Hillers WSAs. • **ACECs:** All of the existing ACECs as specified by management prescriptions to protect relevant and important values. – North Caineville Mesa ACEC – South Caineville Mesa ACEC (overlaps a portion of Mt. Ellen/Blue Hills WSA) – Beaver Wash Canyon ACEC (overlaps a portion of Dirty Devil WSA) – Gilbert Badlands ACEC (overlaps a portion of Mt. Ellen/Blue Hills WSA). • **Trough Hollow:** to protect cultural resources in this area.		Spring/Happy Canyon, Horseshoe Canyon North, Horseshoe Canyon South and Mount Ellen/Blue Hills WSAs. • **WSRs:** to protect outstandingly remarkable values. (Refer to Table 2-20, Wild and Scenic River Decisions) – Fremont Gorge Suitable Wild River. • **ACECs:** to protect R & I values (Refer to Table 2-21, ACEC Decisions) – North Caineville Mesa ACEC – Old Woman Front ACEC. • **SRMAs:** Portions of the proposed SRMAs to retain the desired recreation setting and for consistency with other management decisions. (Refer to Table 2-15, Recreation Decisions) – Dirty Devil SRMA – Fremont Gorge SRMA – Factory Butte SRMA (Landmarks RMZ).	2-20, Wild and Scenic River Decisions) • **ACECs:** As specified by management prescriptions to protect relevant and important values. (Refer to Table 2-21, ACEC Decisions) – Old Woman Front ACEC – Rainbow Hills ACEC – A portion of the Badlands ACEC (mesa tops) – A portion of the Henry Mountains ACEC (No Man's Mesa). • **SRMAs:** Portions of the proposed SRMAs to retain the desired recreation setting, scenic values, and for consistency with other management decisions. In areas where the proposed SRMAs overlap WSAs and/or WSRs, the decisions in those sections would apply to the SRMA. (Refer to Table 2-15, Recreation Decisions) – Dirty Devil SRMA – Henry Mountains SRMA – Capitol Reef Gateway SRMA.	characteristics, to protect their naturalness and opportunities for solitude and primitive recreation. • **WSRs:** All segments proposed to protect outstandingly remarkable river-related values. (Refer to Table 2-20, Wild and Scenic River Decisions) • **ACECs:** As specified by management prescriptions to protect relevant and important values and for consistency with other management decisions. In areas where the potential ACECs overlap WSAs, non-WSA lands and/or WSRs, the decisions in those sections would apply to the ACEC. (Refer to Table 2-21, ACEC Decisions) – All of the Old Woman Front, Rainbow Hills, Dirty Devil, Horseshoe Canyon, and Lower Muddy Creek ACECs – Portions of the Badlands, Bull Creek, Fremont Gorge/Cockscomb, Henry Mountains,

Table 2-16. Travel Management Decisions

				Kingston Canyon, Little Rockies, Quitchupah, and Thousand Lakes Bench ACECs • **SRMAs:** As identified by management actions to retain the desired recreation settings, scenic values and for consistency with other management decisions. In areas where the proposed SRMAs overlap WSAs, non-WSA lands and/or WSRs, the decisions in those sections would apply to the SRMA. (Refer to Table 2-15, Recreation Decisions) – Little Rockies SRMA – Portions of the E. Fork Sevier, San Rafael Swell, Dirty Devil, Capitol Reef Gateway, Henry Mountains, and Labyrinth Canyon SRMAs.
Issue: Designation of Limited Areas				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Continue managing 277,600 acres identified on Map 2-12 as limited to OHV use as identified in current LUPs.	Manage 1,679,000 acres identified on Map 2-13 as limited to designated routes or designated routes with seasonal closures or size/	Manage 1,908,210 acres identified on Map 2-14 as limited to designated routes or designated routes with seasonal closures or size/	Manage 1,445,000 acres identified on Map 2-15 as limited to designated routes or designated routes with seasonal closures or size/	Manage 972,800 acres identified on Map 2-16 as limited to designated routes or designated routes with seasonal closures or size/

Table 2-16. Travel Management Decisions

	width restrictions.	width restrictions.	width restrictions.	width restrictions.
Issue: Route Designation and Vehicle Use within Limited Areas				
Management Actions				
Common to the Proposed RMP and Draft RMP Alternatives				
• Prohibit all cross-country (off-transportation system) motorized travel in limited areas, with the following exceptions: – For emergency and other purposes as authorized under 43 CFR 8340.0-5(a)(2),(3),(4) and (5). • Coordinate OHV route designations with USFS, NPS, State of Utah, counties, and communities, where possible. • Rehabilitate closed OHV routes on a case-by-case basis as required to mitigate impacts to resources. Closed or non-designated routes would be allowed to rehabilitate naturally unless a specific resource impact was occurring that warranted expedited rehabilitation of the route (e.g., soil erosion, water quality concerns, and/or continued illegal use). • Route designations are implementation decisions that are subject to change based upon future site-specific environmental analysis. Appendix 9 provides additional details of the travel management/route designation process, the implementation process, and the process that would be required to add or remove route designations following completion of the RMP.				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Where routes would remain available for motorized use within WSAs, such use could continue on a conditional basis. Use of the existing routes in the WSAs ("ways" when located within WSAs – see Glossary) could continue as long as the use of these routes does not impair wilderness suitability, as provided by the IMP (BLM 1995). If Congress designates the area as wilderness, the routes will be closed. In the interim, if use and/or non-compliance are found through monitoring efforts to impair the area's suitability for wilderness designation, BLM would take further action to limit use of the routes, or close them. The continued use of these routes, therefore, is based on user compliance and non-impairment of wilderness values.			Not applicable (all WSAs are closed to motorized travel).	
Designate existing, inventoried routes for motorized use in accordance with existing LUP direction.	Designate routes or ways for motorized use unless significant, undue damage to or disturbance of the soil, wildlife, wildlife habitat, improvements, cultural or vegetative resources, or other authorized uses of the public lands is imminent, or to prevent impairment of an area's suitability for wilderness (within WSAs).	• Designate routes for motorized use unless significant, undue damage to or disturbance of the soil, wildlife, wildlife habitat, improvements, cultural or vegetative resources, or other authorized uses of the public lands is imminent.	• Designate routes for motorized use unless significant, undue damage to or disturbance of the soil, wildlife, wildlife habitat, improvements, cultural, or vegetative resources or other authorized uses of the public lands is imminent. • Designate routes to	• Designate routes for motorized use unless significant, undue damage to or disturbance of the soil, wildlife, wildlife habitat, improvements, cultural or vegetative resources, or other authorized uses of the public lands is imminent, and to

Table 2-16. Travel Management Decisions

		• Designate routes to minimize harassment of wildlife or significant disruption of wildlife habitats. Give special attention to protecting SSS and their habitats. • Designate routes to minimize conflicts between OHV use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.	prevent harassment of wildlife or significant disruption of wildlife habitats. Give special attention to protecting SSS and their habitats. • Designate routes to prevent conflicts between OHV use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors. • Designate no ways within WSAs.	prevent impairment of wilderness characteristics. • Designate routes to prevent harassment of wildlife or significant disruption of wildlife habitats. Give special attention to protecting SSS and their habitats. • Designate routes to prevent conflicts between OHV use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors. • Designate no ways within WSAs. • Designate no routes in non-WSA lands with wilderness characteristics.
Issue: Identification of Routes Where Seasonal Closures Are Needed to Protect Deer and Elk				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Not specifically addressed in existing plans.	No specific restrictions within crucial habitat.	Limit OHV use to designated routes in deer and elk crucial winter range, except for Glenwood and Aurora Managed Open Areas.	Close identified routes in deer and elk crucial winter range seasonally (December 1–April 15) to protect wildlife values.	

Table 2-16. Travel Management Decisions

		Consider seasonal closure of designated routes on a case-by-case basis, subject to environmental analysis. (Maps 3-6 and 3-7)		
Issue: Identification of Routes Where Seasonal Closures Are Needed to Protect Bison in the Henry Mountains				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Continue seasonal (December 20–March 20) closures in bison crucial habitat at Swap Mesa and Cave Flat.	Limit OHV use to designated routes in bison crucial habitat. Consider seasonal closure of designated routes on a case-by-case basis. (Map 3-5)		Manage OHV use in bison habitat as closed or limited to designated routes, according to the prescriptions outlined in the Henry Mountains ACEC (Table 2-21).	
Summary of Route Designations, For Proposed RMP and Draft Alternatives*				
Management Actions				
Common to the Proposed RMP and Draft RMP Alternatives				
Route designations are implementation decisions that are subject to change in the future based on site-specific environmental analyses.				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
• Designated routes: 4,315 miles • Designated routes with seasonal closures or size/ width restriction: 0 miles • Closed routes: 65 miles	• Designated routes: 4,063 miles • Designated routes with seasonal closures or size/ width restriction: 249 miles • Closed routes: 68 miles (Map 2-17)	• *Designated routes: 3,739 miles* *Implementation level decision. • Designated routes with seasonal closures or size/ width restriction: 538 miles *Implementation level decision. • Closed routes: 345 miles *Implementation level decision.	• Designated routes: 2,601 miles • Designated routes with seasonal closures or size/ width restriction: 591 miles • Closed routes: 1,188 miles (Map 2-19)	• Designated routes: 2,493 miles • Designated routes with seasonal closures or size/ width restriction: 591 miles • Closed routes: 1,296 miles (Map 2-20)

* *This is an implementation-level decision that cannot be protested under the planning regulations. Please see the cover letter for further information.*

Table 2-16. Travel Management Decisions

		(Map 2-18)		
Issue: Motor Vehicle Access for Parking/Staging in OHV Limited Areas Outside WSAs				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Place no restrictions on motorized use off a designated route for the purposes of parking/staging.	Allow motor vehicles to pull off a designated route up to 100 feet of either side of the centerline for the purposes of parking/staging.	Allow motor vehicles to pull off a designated route up to 50 feet of either side of the centerline for the purposes of parking/staging.	Allow motor vehicles to pull off of a designated route up to 25 feet of either side of the centerline for the purposes of parking/staging.	
Issue: Motor Vehicle Access to Campsites in OHV Limited Areas Outside WSAs				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Place no restrictions on motorized access to campsites, in accordance with current LUPs.	• Allow motor vehicles to use existing spur routes for ingress and egress to established campsites within 300 feet of the centerline of designated routes. (Previous campsites can be distinguished by evidence of rock fire rings, old tent sites, and tracks from earlier vehicle access.) This does not authorize creation of new campsites or travel ways. • Prohibit motorized travel ways between multiple campsites, establishment of motorized play areas, race tracks, or travel across wet meadows or	• Allow motor vehicles to use existing spur routes for ingress and egress to established campsites within 150 feet of designated routes. (Previous campsites can be distinguished by evidence of rock fire rings, old tent sites, and tracks from earlier vehicle access.) This does not authorize creation of new campsites or travel ways. • Prohibit motorized travel ways between multiple campsites, establishment of motorized play areas, race tracks, or travel across wet meadows or	• Designate campsites for motor vehicle use where compatible with other resources and resource uses. • Prohibit motorized travel ways between multiple campsites, establishment of motorized play areas, race tracks, or travel across wet meadows or riparian areas. • Prohibit motorized access to camping areas where conflicts with other resources are identified.	

Table 2-16. Travel Management Decisions

	riparian areas. • Prohibit motorized access to camping areas where conflicts with other resources are identified.	riparian areas. • Prohibit motorized access to camping areas where conflicts with other resources are identified.		
Issue: Motor Vehicle Access to Campsites and for Parking/Staging in OHV Limited Areas Within WSAs				
Management Actions				
Common to the Proposed RMP and Draft RMP Alternatives				
Require vehicles to stay on designated ways or cherry-stemmed routes within WSAs, in accordance with IMP direction.			Not applicable (All WSAs are closed to motorized travel.)	
Issue: Game Retrieval				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Not specifically addressed in existing plans.	Do not allow use of non-motorized wheel carriers to retrieve game kills inside of WSAs.		Preclude the use of game carriers off designated routes.	
Issue: Management of Paiute ATV Trail and Great Western Trail				
Management Actions				
Common to the Proposed RMP and Draft RMP Alternatives				
Cooperatively manage with the USFS, State of Utah, and local governments the portions of the Paiute ATV Trail and Great Western Trail systems that lie on public lands managed by the RFO.				

Lands and Realty

Table 2-17. Lands and Realty Decisions

Desired Outcomes (Goals and Objectives)
• Retain public lands in federal ownership, unless it is determined that disposal of a particular parcel will serve the public interest. • Emphasize a balanced program of disposals, acquisitions, and land exchanges in conducting land tenure adjustments. • Consider land tenure adjustments to improve land ownership patterns, accomplish resource management goals, and accommodate community expansion and economic development needs. • Support alternative energy development purposes, such as wind and solar energy resources, and coordinate with other resource objectives. • Use ROW corridors and collocate new proposals within existing sites or ROW areas, to the extent practical, in order to minimize adverse environmental impacts and the proliferation of separate ROWs. • Retain in federal ownership, public lands that enhance multiple-use management, allow access to public lands, or contain sensitive or rare resources. • Acquire lands or interests in lands to complement existing resource values and uses. • Consider for disposal lands or interests in lands that are difficult and/or uneconomical to manage, or are no longer needed for federal purposes. • Consider land or interest in land for disposal if: 1) it was acquired for a specific purpose and is no longer required for that or any other federal purpose; 2) said land would serve important public objectives that cannot be achieved prudently or feasibly on lands other than public lands and that outweigh other public objectives and values, or; 3) because of its location or other characteristics is difficult and uneconomic to manage as part of the public lands and is not suitable for management by another federal department or agency. The method used to identify the parcels considered for disposal (Appendix 5) included: FLPMA Section 203 sales criteria, land tenure adjustment criteria (identified in Appendix 5), a BLM inter-disciplinary team review of land status ownership maps, historical index, the LR 2000 database, and resource information. • As per the State of Utah v. Andrus, Oct. 1, 1979 (Cotter Decision), the BLM would grant the State of Utah reasonable access to state lands for economic purposes, on a case-by-case basis.
Issue: Land Tenure Adjustments General Direction
Management Actions
Common to the Proposed RMP and Draft RMP Alternatives
• For any form of land tenure adjustment (including, but not limited to, exchanges, in lieu selections, state grants, desert land entries, R&PP patents, easement acquisitions, etc.), except for FLPMA Section 203 sales, ensure it meets one or more of the following criteria: – Is in the public interest and accommodates the needs of state, local, or private entities, including needs for the economy, community growth and expansion, and be in accordance with other land use goals, objectives, and planning decisions – Results in a net gain of important and manageable resource values on public lands such as crucial wildlife habitat, significant cultural sites, high-value recreation areas, high-quality riparian areas, live water, SSS habitat, or areas key to maintenance of productive ecosystems – Ensures the accessibility of public lands in areas where access is needed and cannot otherwise be obtained; – Is essential to allow effective management of public lands in areas where consolidation of ownership is necessary to meet resource management objectives – Is not suitable for management by another federal department or agency

Table 2-17. Lands and Realty Decisions

- Results in the acquisition of lands that serve a national priority as identified in national policy directives.

- In addition to the above criteria, require a site-specific environmental analysis in accordance with NEPA for all future land disposal actions. Critical Elements of the Human Environment and other resource issues identified through public and agency involvement would be adequately considered and appropriately evaluated. Certain elements of the human environment are subject to requirements specified in statutes, regulations, or executive orders. Program-specific consultation would occur (if required), and respective on-site surveys and documented clearances would be obtained prior to any land disposal action. This subsequent analysis and documentation may reveal resource conditions that could not be mitigated to the satisfaction of the authorized officer and may, therefore preclude disposal.
- Ensure all land tenure adjustments must be in conformance with other decisions (goals, objectives, management actions) within this RMP.
- Habitat for listed and candidate T&E species are generally required to be retained in Federal ownership. Consider exceptions in disposal actions with the State of Utah and others with consultation with and concurrence of the USFWS.
- Permit surface lands identified for disposal with unpatented mining claims to be conveyed if the purchaser is the mining claimant, or the mining claims are relinquished if the purchaser is other than the mining claimant.
- Issue patents for existing shooting ranges [Appendix 5, Table A5-11]). No portions of these R&PP patented lands, under any circumstances, would revert to the United States if any such portion was used for solid waste disposal or for any other purpose that may result in the disposal, placement, or release of any hazardous substance.
- Where consistent with the goals and objectives of the RMP, classify as suitable for lease and/or disposal under Section 7 of the Taylor Grazing Act of 1934, as amended, lands disposed of or leased under the R&PP Act, Desert Land Entry (DLE) Act, Color of Title, Carey Act, and state grants.
- As the preferred method, manage OHV Open Play Areas located near communities by issuing a lease or patent under the R&PP Act, and have the relevant state, county, or local community manage the areas.
- Pursue land acquisitions from willing sellers when lands:
  - Are within or adjacent to WSAs, ACECs, WSRs, or other special designations
  - Are associated with key fisheries or wildlife habitats and riparian zones
  - Provide linkage or public access to other public lands
  - Have significant paleontological or cultural resources
  - Provide high recreation or other significant resource or public values
  - Are needed to improve manageability of public lands.
- Give land exchanges with the State of Utah priority consideration to resolve inholdings issues.

Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
• Retain all eligible WSR segments (12 segments—135 miles) in federal ownership, unless such action would benefit outstandingly	• Maintain important recreational values and sites in federal ownership • The Utah BLM Riparian Management Policy identifies that Riparian	• Retain the suitable WSR segment (1 segment—5 miles) in federal ownership, unless such action would benefit outstandingly	• Retain all suitable WSR segments (12 segments—135 miles) in federal ownership, unless such action would benefit outstandingly	• Retain all suitable WSR segments (12 segments—135 miles) in federal ownership, unless such action would benefit outstandingly

Table 2-17. Lands and Realty Decisions

remarkable values and improve WSR management potential.	areas will be retained in the public land system unless it can be clearly demonstrated that specific sites are so small or isolated that they cannot be managed in an effective manner by BLM or through agreement with State or Federal agencies or interested conservation groups. • Retain identified, relatively undisturbed Old Spanish Trail segments in federal ownership. • Retain habitat for federally listed and candidate species in federal ownership. Exceptions may be considered in exchanges with the State of Utah and others after consultation with and concurrence with the USFWS.	remarkable values and improve WSR management potential. • Retain non-WSA lands with wilderness characteristics carried forward (78,600 acres) in federal ownership. • Maintain important recreational values and sites in federal ownership • The Utah BLM Riparian Management Policy identifies that Riparian areas will be retained in the public land system unless it can be clearly demonstrated that specific sites are so small or isolated that they cannot be managed in an effective manner by BLM or through agreement with State or Federal agencies or interested conservation groups. Retain identified, relatively undisturbed Old Spanish Trail segments in federal ownership. • Retain habitat for federally listed and candidate species in federal ownership. Exceptions may be considered in exchanges with the	remarkable values and improve WSR management potential. • Maintain important recreational values and sites in federal ownership • The Utah BLM Riparian Management Policy identifies that Riparian areas will be retained in the public land system unless it can be clearly demonstrated that specific sites are so small or isolated that they cannot be managed in an effective manner by BLM or through agreement with State or Federal agencies or interested conservation groups. • Retain identified, relatively undisturbed Old Spanish Trail segments in federal ownership. • Retain habitat for federally listed and candidate species in federal ownership. Exceptions may be considered in exchanges with the State of Utah and others after consultation with and concurrence with the	remarkable values and improve WSR management potential. • Retain non-WSA lands with wilderness characteristics (682,600 acres) in federal ownership. • Maintain important recreational values and sites in federal ownership • The Utah BLM Riparian Management Policy identifies that Riparian areas will be retained in the public land system unless it can be clearly demonstrated that specific sites are so small or isolated that they cannot be managed in an effective manner by BLM or through agreement with State or Federal agencies or interested conservation groups. Retain identified, relatively undisturbed Old Spanish Trail segments in federal ownership. • Retain habitat for federally listed and candidate species in federal ownership. Exceptions may be considered in exchanges with the

Table 2-17. Lands and Realty Decisions

		State of Utah and others after consultation with and concurrence with the USFWS.	USFWS.	State of Utah and others after consultation with and concurrence with the USFWS.
Issue: FLPMA Section 203 Sales				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Continue to offer for sale lands identified in the *Mountain Valley MFP* (280 of the acres identified are still available).	Make approximately 13,400 acres of public land available for FLPMA Section 203 sales (as listed in Appendix 5 and shown on Maps 2-21 through 2-25) subject to NEPA compliance and consistent with other decisions in this RMP.		Consider no lands for FLPMA Section 203 sales.	
Issue: Withdrawals, Classifications, and Segregations				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
• Review existing withdrawals to determine whether they are serving the purposes for which they were withdrawn. (Existing withdrawals are listed in Table A5-7 in Appendix 5.) • Manage any lands becoming unencumbered by withdrawals in a manner consistent with adjacent or comparable public land within the RFO. • Review existing classifications and segregations on a case-by-case basis to determine whether the classification or segregation is appropriate and should be continued, modified, or terminated.				
Continue existing withdrawals (154,700 acres). Recommend withdrawing the following developed recreation sites from mineral entry: • Lonesome Beaver Campground • McMillan Spring Campground • Starr Springs Campground	Continue existing withdrawals (154,700 acres).	Continue existing withdrawals (154,700 acres). Recommend withdrawing the following areas from mineral entry (Map 2-27): • North Caineville Mesa ACEC • Old Woman Front ACEC • Fremont (Fremont Gorge) suitable wild river within one-quarter mile of each side of	Continue existing withdrawals (154,700 acres). Recommend withdrawing the following areas from mineral entry (Map 2-28): • Rainbow Hills ACEC • Old Woman Front ACEC • All suitable WSRs within one-quarter mile each side of those rivers	Continue existing withdrawals (154,700 acres). Recommend withdrawing the following areas from mineral entry (Map 2-29): • Rainbow Hills ACEC • Old Woman Front ACEC • All suitable WSRs within one-quarter mile each side of those rivers

Table 2-17. Lands and Realty Decisions

• Dandelion Flat Picnic Area • Hog Springs Picnic Area. Recommend withdrawing the four existing ACECs (14,780 acres) from mineral entry. Total acres: 169,480		high water mark on each bank of the river • Developed recreation sites, including Lonesome Beaver Campground, McMillan Spring Campground, Starr Springs Campground, Dandelion Flat Picnic Area, Hog Springs Picnic Area, Otter Creek Reservoir Recreation Sites, Kingston Canyon Recreation Site, and Koosharem Picnic Area. New recommended acres: 21,500 Total acres: 176,200	• Developed recreation sites, including Lonesome Beaver Campground, McMillan Spring Campground, Starr Springs Campground, Dandelion Flat Picnic Area, Hog Springs Picnic Area, Otter Creek Reservoir Recreation Sites, Kingston Canyon Recreation Site, and Koosharem Picnic Area Recommend withdrawing the VRM Class II portions of the following ACECs from mineral entry (see ACEC prescriptions for details): • Dirty Devil/North Wash ACEC • Fremont Gorge/ Cockscomb ACEC • Badlands ACEC • Henry Mountains ACEC • Horseshoe Canyon ACEC • Little Rockies ACEC. New recommended acres: 176,400 Total acres: 331,100	• All areas identified as non-WSA lands with wilderness characteristics. • Developed recreation sites, including Lonesome Beaver Campground, McMillan Spring Campground, Starr Springs Campground, Dandelion Flat Picnic Area, Hog Springs Picnic Area, Otter Creek Reservoir Recreation Sites, Kingston Canyon Recreation Site, and Koosharem Picnic Area Recommend withdrawing the VRM Class II portions of the following ACECs from mineral entry (see ACEC prescriptions for details): • Dirty Devil/North Wash ACEC • Fremont Gorge/ Cockscomb ACEC • Badlands ACEC • Henry Mountains ACEC • Horseshoe Canyon ACEC • Little Rockies ACEC. New recommended acres: 749,200 Total acres: 903,900

Table 2-17. Lands and Realty Decisions

Issue: Management of ROWs				
Management Actions				
Common to the Proposed RMP and Draft RMP Alternatives				
In existing ROWs, authorize culinary water source developments (Culinary Water Sources Table A5-12 in Appendix 5) subject to valid existing rights and future land use authorizations to ensure that they do not lead to degradation, pollution, or contamination of water supply. When compatible, require multiple communication site users to share the same sites and buildings, and use the same facilities. See Existing Communication Sites Table A5-10 in Appendix 5. Continue to maintain roads for resource management purposes. Consider obtaining easements across non-federal land to: • Provide public access • Enhance resource management in key fishery and wildlife habitats and riparian zones • Cooperate with other federal, state, and local governing agencies, organizations, tribes, and private individuals in obtaining ROW easements • Enhance resource management.				
Issue: ROW Avoidance and Exclusion Areas				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Apply the spatial and temporal restrictions outlined in Table 2-9, Fish and Wildlife Decisions to ROW construction and maintenance activities. These restrictions do not apply to emergency maintenance.				
Manage the following as ROW avoidance areas (Map 2-30): • WSAs • ACECs • Eligible WSR corridors • Areas closed to oil and gas leasing • Areas open to oil and gas leasing with NSO stipulations.	Manage the following as ROW avoidance or exclusion areas (Map 2-31): • WSAs • Areas closed to oil and gas leasing.	Manage the following as ROW avoidance areas (Map 2-32): • ACECs • Non-WSA lands with wilderness characteristics • Areas closed to oil and gas leasing • Areas open to oil and gas leasing with NSO stipulations. Manage the following areas as exclusion areas: • Areas closed to oil and	Manage the following as ROW avoidance or exclusion areas (Map 2-33): • WSAs • ACECs • Suitable WSR corridors • Areas closed to oil and gas leasing • Areas open to oil and gas leasing with NSO stipulations.	Manage the following as ROW avoidance or exclusion areas (Map 2-34): • WSAs • ACECs • Suitable WSR corridors • Non-WSA lands with wilderness characteristics • Areas closed to oil and gas leasing • Areas open to oil and gas leasing with NSO stipulations.

Table 2-17. Lands and Realty Decisions

		gas leasing • WSAs. • Suitable WSR corridor-Fremont Gorge		
Consider exceptions in the avoidance areas on a case-by-case basis if the proposed ROW would: • Not create substantial surface disturbance or would cause only temporary impacts • Be compatible with the resource values being protected by the goals and objectives of the avoidance areas • Be consistent with management prescriptions for ACECs and WSRs and pose no irreversible or irretrievable impacts (Proposed RMP and Draft Alternatives N, C and D) • Be consistent with the goals and objectives of the identified non-WSA lands with wilderness characteristics (Proposed RMP and Draft Alternative D).				
Issue: Management of Wind and Solar Energy Development				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Not specifically addressed in existing plans.	For authorization of any ROW for wind or solar energy development, incorporate best management practices (BMP) and provisions contained in the Wind Energy Development Program Record of Decision (Appendix 15 of this Proposed RMP/Final EIS and BLM 2005d) and BLM's Solar Energy Policy.			
Consider wind and solar energy exploration and development on a case-by-case basis.	Consider proposals for wind and solar energy exploration and development throughout the RFO with the following exceptions: • WSAs (ROW exclusion areas in accordance with IMP).	Consider proposals for wind and solar energy development throughout the RFO except within the following areas: • WSAs (ROW exclusion areas in accordance with IMP) • Fremont (Fremont Gorge) suitable wild river corridor • ACECs • Areas open to oil and gas leasing with NSO and areas closed to leasing. • VRM Class I and II	Consider proposals for wind and solar energy development throughout the lands administered by the RFO except within the following areas: • WSAs (ROW exclusion areas in accordance with IMP) • Suitable WSR corridors • ACECs • Areas open to oil and gas leasing with NSO and areas closed to leasing • VRM Class I and II areas	Consider proposals for wind and solar energy development throughout the lands administered by the RFO except within the following areas: • WSAs (ROW exclusion areas in accordance with IMP) • Non-WSA lands with wilderness characteristics • Suitable WSR corridors • ACECs • Areas open to oil and gas leasing with NSO and areas closed to

Table 2-17. Lands and Realty Decisions

		areas • Migratory bird habitats and raptor nesting complexes • Threatened & Endangered Species habitats Consider proposals for wind and solar energy exploration throughout the RFO managed lands. Except for WSAs, exploration may be allowed within special management areas if the proposal would not adversely affect the resources of concern.	• Migratory bird habitats and raptor nesting complexes • SSS habitats Consider proposals for wind and solar energy exploration throughout the RFO managed lands. Except for WSAs, exploration may be allowed within special management areas if the proposal would not adversely affect the resources of concern.	leasing. • VRM Class I and II areas • Migratory bird habitats and raptor nesting complexes • SSS habitats Consider proposals for wind and solar energy exploration throughout the RFO managed lands. Except for WSAs, exploration may be allowed within special management areas if the proposal would not adversely affect the resources of concern.
Issue: Transportation and Utility Corridors				
Management Actions				
Common to the Proposed RMP and Draft RMP Alternatives				
• To minimize adverse environmental impacts and the proliferation of separate ROWs, use common ROWs whenever possible, including collocation of new utility transmission lines and other facilities within existing utility and highway corridors. • Carry forward to or amend the Richfield RMP with any decisions on designation of energy corridors contained within the "West-wide Energy Corridor Programmatic EIS" currently being developed separately from this RMP analysis that affect public lands in the RFO.				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Designate no transportation and utility corridors.	Designate those transportation and utility corridors listed in Appendix 5.			
Issue: Leases (Including R&PP Leases), Permits, and Easements				
Management Actions				
Common to the Proposed RMP and Draft RMP Alternatives				
Consider authorizing leases, permits, and easements that are compatible with other decisions throughout this RMP.				

Minerals and Energy

Table 2-18. Minerals and Energy Decisions

Desired Outcomes (Goals and Objectives)
• Manage conservation of leasable mineral resources using appropriate best management practices, and without compromising the long-term health and diversity of public lands. • Manage mining claim location, prospecting, and mining operations in a manner that would not cause unnecessary or undue degradation of public lands and resources. • Provide salable minerals needed for community and economic purposes while minimizing impacts to other resource values. • Encourage and facilitate the development by private industry of public land mineral resources in a manner that satisfies national and local needs and provides for economical and environmentally sound exploration, extraction, and reclamation practices using appropriate BMPs. • Support the domestic need for energy resources.
Issue: Management of Fluid Mineral Leasing (Oil and Gas, and Coalbed Natural Gas)
Management Actions
Common to the Proposed RMP and Draft RMP Alternatives
• Issue oil and gas leases and allow for oil and gas exploration and development. • Continue closure of WSAs to leasing, pursuant to the federal onshore Oil and Gas Leasing Reform Act of 1987. • To the extent allowed by a site-specific environmental analysis that justifies a constraint, consistent with 43 CFR 3101.1-2, and consistent with the terms of an existing lease, apply the constraints and requirements for leasing implemented in this RMP to leases that were authorized prior to the signing of the ROD and the approval of the RMP. • Manage the following sites as closed to leasing: – Incorporated municipalities. • Manage the following additional sites as open to leasing with NSO, except as otherwise provided in other management decisions: – All cemeteries – Culinary water sources – Landfills—existing and closed – Lands managed under a R&PP lease – Sites listed on the NRHP – Developed recreation sites – BLM administrative sites. • Lease split-estate lands according to BLM RMP stipulations for adjacent or nearby public lands or plans of other surface management agencies as consistent with federal laws, 43 CFR 3101, and the surface owner's rights. • Work cooperatively with stakeholders to research interim measures, such as those presented by the Four Corners Air Quality Task Force (i.e., limits of 2g/bhp-hr on engines less than 300 HP), to determine which emission mitigation strategies should be required as conditions for future lease and land use authorizations.

Table 2-18. Minerals and Energy Decisions

- Site-specific management actions that protect riparian areas would be addressed at the project level.
- In accordance with an UDEQ-DAQ letter dated June 6, 2008, (see Appendix 21) requesting implementation of interim nitrogen oxide control measures for compressor engines; BLM will require the following as a Lease Stipulation and a Condition of Approval for Applications for Permit to Drill:
  - All new and replacement internal combustion gas field engines of less than or equal to 300 design-rated horsepower must not emit more than 2 gms of NOx per horsepower-hour. This requirement does not apply to gas field engines of less than or equal to 40 design-rated horsepower.
  - All new and replacement internal combustion gas field engines of greater than 300 design rated horsepower must not emit more than 1.0 gms of NOx per horsepower-hour.

Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Area closed to leasing: 459,700 acres	Area closed to leasing: 446,900 acres	Area closed to leasing: 447,300 acres	Area closed to leasing: 586,300 acres	Area closed to leasing: 1,160,500 acres
Manage fluid mineral leases as shown on Map 2-35: • Areas open to leasing with standard lease terms: 1,236,500 acres • Areas open to leasing subject to CSU and/or timing limitations: 409,200 acres • Areas open to leasing subject to NSO: 22,600 acres	Manage fluid mineral leases as shown on Map 2-36: • Areas open to leasing with standard lease terms: 860,600 acres • Areas open to leasing subject to CSU and/or timing limitations: 820,500 acres • Areas open to leasing subject to NSO: 0 acres	Manage fluid mineral leases as shown on Map 2-37: • Areas open to leasing with standard lease terms: 608,700 acres • Areas open to leasing subject to CSU and/or timing limitations: 917,500 acres • Areas open to leasing subject to NSO: 154,500 acres	Manage fluid mineral leases as shown on Map 2-38: • Areas open to leasing with standard lease terms: 491,900 acres • Areas open to leasing subject to CSU and/or timing limitations: 901,100 acres • Areas open to leasing subject to NSO: 148,700 acres	Manage fluid mineral leases as shown on Map 2-39: • Areas open to leasing with standard lease terms: 290,200 acres • Areas open to leasing subject to CSU and/or timing limitations: 634,000 acres • Areas open to leasing subject to NSO: 43,300 acres
Issue: Management of Geophysical Operations				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Geophysical operations are subject to the oil and gas leasing categories.	Subject geophysical operations under 43 CFR 3150 to the oil and gas leasing restrictions with the following exception: • Consider geophysical operations proposed for lands that are designated as NSO or closed to leasing for approval when (1) the circumstances or relative resource values in the area have changed, (2) less restrictive requirements could be developed to protect the resource of concern, or (3) operations could be conducted without causing unacceptable impacts to the resource of concern.			

Table 2-18. Minerals and Energy Decisions

Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Issue: Management of Geothermal Resources				
Management Actions				
Common to the Proposed RMP and Draft RMP Alternatives				
Lease split-estate lands according to BLM RMP stipulations for adjacent or nearby public lands or plans of other surface management agencies, consistent with federal laws, 43 CFR 3101, and the surface owner's rights.				
Continue to allow geothermal leasing on a case-by-case basis. Use the oil and gas leasing designations as a guide for geothermal resources.	• Lease geothermal resources in conformance with the oil and gas leasing restrictions (open, open with moderate constraints, open with major constraints, and closed) for oil and gas leasing, consistent with the authorities granted at 43 CFR 3200, including 3201 and 3250. • Note: exploration operations under 43 CFR 3250 proposed for lands that are designated as NSO or closed to leasing may be considered for approval when (1) the circumstances or relative resource values in the area have changed, (2) less restrictive requirements could be developed to protect the resource of concern or (3) operations could be conducted without causing unacceptable impacts to the resource or concern.			
Issue: Management of Tar Sands Areas				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Areas available for future consideration for tar sands leasing will be identified in the ROD for the *National Oil Shale and Tar Sands Programmatic EIS,* being conducted by BLM separately from this analysis. If lands are identified, future leasing considerations will be conducted under site-specific NEPA analyses, and would be subject to the oil and gas leasing restrictions identified in the Proposed RMP and DRMP/DEIS Alternatives.				
Issue: Surface Mining of Coal				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Consider leasing coal resources on the following lands identified in the existing LUPs as acceptable: • 25,446 acres of federal mineral estate in the Henry Mountains are identified as acceptable for consideration of coal leasing by surface mining methods.	• Consider applications for exploration licenses for lands that are subject to leasing as defined at 43 CFR 3400.2. Licenses would be subject to the surface disturbing restrictions and the provisions for exceptions, modifications, and waivers, similar to the oil and gas restrictions consistent with the regulations at 43 CFR 3400. • Consider proposals for coal leasing on public lands determined to be acceptable for further consideration for leasing in the coal unsuitability analysis (Appendix 8), if and when there is interest. Prior to leasing, complete a multiple use analysis (43 CFR 3420.1 (3)), consult with other surface owners (43 CFR 3420.1-5 (4) (i)), and address other applicable requirements of 43 CFR 3400 Coal Management. – In the Henry Mountains coal field, 14,719 acres are acceptable for consideration for leasing by surface mining methods. – In the Wasatch Plateau and Emery coal fields, 0 acres are acceptable for consideration for leasing by surface mining			

Table 2-18. Minerals and Energy Decisions

• 30,052 acres of federal mineral estate in the Wasatch Plateau and Emery coal fields are identified as acceptable for consideration of coal leasing by surface mining methods.	methods.			
Consider no coal leasing proposals in VRM Class I areas. VRM Classes II, III, and IV areas would be subject to coal exploration and development mitigation requirements, with VRM Class II being most restrictive and VRM Class IV least restrictive.	• Consider no coal leasing proposals in VRM Class I areas. VRM Classes II, III, and IV areas would be subject to coal exploration and development mitigation requirements, with VRM Class II being most restrictive and VRM Class IV least restrictive. • Consider no coal leasing proposals in the 12 (78,600 acres) identified non-WSA lands with wilderness characteristics.	Consider no coal leasing proposals in VRM Class I or II areas.	• Consider no coal leasing proposals in VRM Class I or II areas. • Consider no coal leasing proposals in non-WSA lands with wilderness characteristics (682,600 acres).	
Issue: Subsurface Mining of Coal				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Consider leasing coal resources on the following lands currently identified as acceptable: • 107,414 acres of federal mineral estate	• Consider applications for exploration licenses for lands that are subject to leasing as defined at 43 CFR 3400.2. Licenses would be subject to the surface disturbing restrictions and the provisions for exceptions, modifications, and waivers, similar to the oil and gas restrictions consistent with the regulations at 43 CFR 3400. • Consider proposals for coal leasing on public lands determined to be acceptable for further consideration for leasing in the coal unsuitability analysis (Appendix 8), if and when there is interest. Prior to leasing, complete a multiple use analysis (43 CFR 3420.1 (3)), consult with other surface owners (43 CFR 3420.1-5 (4) (i)), and address other applicable			

Table 2-18. Minerals and Energy Decisions

in the Henry Mountains are identified as acceptable for consideration of leasing by underground mining with 19,255 acres subject to no surface facilities. • 73,952 acres of federal mineral estate in the Wasatch Plateau and Emery coal fields are identified as acceptable for consideration of leasing with 43,567 acres subject to no surface facilities.	requirements of 43 CFR 3400 Coal Management. – In the Henry Mountains coal field, 41,842 acres of BLM lands are acceptable for consideration for leasing by underground mining methods. – In the Wasatch Plateau coal field, 18,672 acres of National Forest, and in the Emery coal field, 9,624 acres of BLM lands and 3,542 acres of National Forest are acceptable for consideration for leasing by underground mining methods.			
Consider no coal leasing proposals in VRM Class I areas. VRM Class II, III, and IV areas would be subject to coal exploration and development mitigation requirements, with VRM Class II being most restrictive and VRM IV least restrictive.			Consider no coal leasing proposals in VRM Class I or II areas.	• Consider no coal leasing proposals in VRM Class I or II areas. • Consider no coal leasing proposals in non-WSA lands with wilderness characteristics.
Issue: Management of Non-Energy Solid Leasable Minerals				
Management Actions				
Common to the Proposed RMP and Draft RMP Alternatives				
Mineral use authorizations for non-energy solid leasable minerals include: prospecting permits, exploration licenses, preference right leases, competitive leases, fringe acreage leases, lease modifications, and use permits. As used herein, the term *leasing* is used to refer to any of the mineral use authorizations, because if the area is not open to leasing, then an exploration authorization or lease modification would not be considered. Any mineral use authorization issued after the RMP is approved would be subject to the stipulations developed in the RMP. The open and closed areas for leasing of non-energy solid leasable minerals would be the same as provided for oil and gas leasing, including exceptions, modifications, and waivers.				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
• Continue to prohibit leasing in WSAs, within	• Manage leasing as	• Manage leasing as	• Manage leasing as	• Manage leasing as

Table 2-18. Minerals and Energy Decisions

one-quarter mile of eligible wild and scenic rivers, and within ACECs. • Allow leasing where it is consistent with the existing LUPs and has been addressed in a NEPA analysis.	shown on Map 2-40. • Areas closed to leasing (WSAs): – 446,900 acres • Areas open to leasing subject to standard conditions of approval: – 860,600 acres • Areas open to leasing subject to CSU and/or timing limitations: – 820,500 acres • Areas open to leasing subject to NSO: – 0 acres	shown on Map 2-41. • Closed to leasing in WSAs and, within one-quarter mile of the high water mark on each bank of the Fremont Gorge WSR recommended as suitable. • Areas closed to leasing: – 447,300 acres • Areas open to leasing subject to standard conditions of approval: – 608,700 acres • Areas open to leasing subject to CSU and/or timing limitations: – 917,500 acres • Areas open to leasing subject to NSO: – 154,500 acres	shown on Map 2-42. • Closed to leasing in WSAs, within one-quarter mile of the 12 WSRs recommended as suitable, and within the following ACECs: – Dirty Devil/North Wash ACEC – Fremont Gorge/ Cockscomb ACEC – Badlands ACEC – Henry Mountains ACEC – Horseshoe Canyon ACEC – Little Rockies ACEC – Rainbow Hills ACEC • Areas closed to leasing: – 586,300 acres • Areas open to leasing subject to standard conditions of approval: – 491,900 acres • Areas open to leasing subject to CSU and/or timing limitations: – 901,100 acres • Areas open to leasing subject to NSO: – 148,700 acres	shown on Map 2-43. • Closed to leasing in WSAs, non-WSA lands with wilderness characteristics, within one-quarter mile of the 12 WSRs recommended as suitable, and within the following ACECs: – Dirty Devil/North Wash ACEC – Fremont Gorge/ Cockscomb ACEC – Badlands ACEC – Henry Mountains ACEC – Horseshoe Canyon ACEC – Little Rockies ACEC – Rainbow Hills ACEC • Areas closed to leasing: – 1,160,500 acres • Areas open to leasing subject to standard conditions of approval: – 290,200 acres • Areas open to leasing subject to CSU and/or timing limitations: – 634,000 acres • Areas open to leasing subject to NSO: – 43,300 acres

Table 2-18. Minerals and Energy Decisions

Issue: Management of Locatable Minerals				
Management Actions				
Common to the Proposed RMP and Draft RMP Alternatives				
Continue to make existing operations subject to the stipulations developed for the notice or plan of operations. The BLM would evaluate all operations authorized by the mining laws in the context of its requirement to prevent unnecessary and undue degradation of federal lands and resources and the non-impairment standards of the federal regulations at 43 CFR 3802 and the IMP for WSAs. Consistent with the rights afforded claimants under the mining laws, operations conducted after the RMP is approved would be required to conform to the stipulations developed in the RMP and as generally provided in the oil and gas stipulations. The oil and gas stipulations would be a general guideline and may not apply uniformly to all operations under the mining laws. Operations on BLM-administered lands open to mineral entry must be conducted in compliance with all of the BLM's surface management regulations The BLM surface management regulations apply to public lands, including split estate lands where the minerals are reserved to the United States, but the regulations do not apply to surface lands managed by other federal agencies. All public lands with federal mineral estate are open to mining claim location unless specifically withdrawn from mineral entry by Secretarial order or by a public land law. Therefore, other than the existing withdrawals and those recommended by this RMP, all public lands within the RFO remain open to mineral entry under the mining laws. The BLM may recommend future withdrawals in areas identified as closed or with a NSO stipulation for oil and gas leasing, if it becomes necessary to prevent unacceptable resource impacts.				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
• Continue to allow location, exploration, and development of locatable minerals while preventing unnecessary and undue degradation of other resources and preventing impairment to wilderness suitability of WSAs. • Continue existing withdrawals (154,700 acres). Recommend withdrawing four existing ACECs (14,780 acres) from mineral entry. Total acres: 169,480	• Allow location, exploration, and development of locatable minerals while preventing unnecessary and undue degradation of other resources and preventing impairment to wilderness suitability of WSAs. • Continue existing withdrawals (154,700 acres). Total acres: 154,700	• Allow location, exploration, and development of locatable minerals on public lands while preventing unnecessary and undue degradation of other resources and preventing impairment to wilderness suitability of WSAs. • Continue existing withdrawals (154,700 acres). Recommend withdrawing the following areas from mineral entry: – Developed recreation sites, including Lonesome Beaver Campground,	• Allow location, exploration, and development of locatable minerals on public lands while preventing unnecessary and undue degradation of other resources and preventing impairment to wilderness suitability of WSAs. • Continue existing withdrawals (154,700 acres). Recommend withdrawing the following areas from mineral entry: – Developed recreation sites, including Lonesome Beaver Campground,	• Allow location, exploration, and development of locatable minerals on public lands while preventing unnecessary and undue degradation of other resources and preventing impairment to wilderness suitability of WSAs. • Continue existing withdrawals (154,700 acres). Recommend withdrawing the following areas from mineral entry: – Developed recreation sites, including Lonesome Beaver Campground,

Table 2-18. Minerals and Energy Decisions

		McMillan Spring Campground, Starr Springs Campground, Dandelion Flat Picnic Area, Hog Springs Picnic Area, Otter Creek Reservoir Recreation Sites, Kingston Canyon Recreation Site, and Koosharem Picnic Area – North Caineville Mesa ACEC – Old Woman Front ACEC – Fremont Gorge Suitable WSR (within one-quarter mile of the high water mark of each bank of the river). The proposed new withdrawals would encompass 21,500 acres. Total acres: 176,200	McMillan Spring Campground, Starr Springs Campground, Dandelion Flat Picnic Area, Hog Springs Picnic Area, Otter Creek Reservoir Recreation Sites, Kingston Canyon Recreation Site, and Koosharem Picnic Area – Dirty Devil/North Wash ACEC (VRM Class II area) – Fremont Gorge/ Cockscomb ACEC (VRM Class II area) – Badlands ACEC (VRM Class II area) – Henry Mountains ACEC (VRM Class II area) – Horseshoe Canyon ACEC (VRM Class II area) – Little Rockies ACEC (VRM Class II area) – Rainbow Hills ACEC – All suitable WSRs within a one-quarter mile corridor along each side of the river. The proposed new withdrawals would encompass 176,400 acres. Total acres: 331,100	McMillan Spring Campground, Starr Springs Campground, Dandelion Flat Picnic Area, Hog Springs Picnic Area, Otter Creek Reservoir Recreation Sites, Kingston Canyon Recreation Site, and Koosharem Picnic Area – Dirty Devil/North Wash ACEC (VRM Class II area) – Fremont Gorge/ Cockscomb ACEC (VRM Class II area) – Badlands ACEC (VRM Class II area) – Henry Mountains ACEC (VRM Class II area) – Horseshoe Canyon ACEC (VRM Class II area) – Little Rockies ACEC (VRM Class II area) – Rainbow Hills ACEC – All suitable WSRs within a one-quarter mile corridor along each side of the river – All non-WSA lands with wilderness characteristics. The proposed new withdrawals would

Table 2-18. Minerals and Energy Decisions

				encompass 749,200 acres. Total acres: 903,900
Issue: Management of Salable Minerals (Mineral Materials)				
Management Actions				
Common to the Proposed RMP and Draft RMP Alternatives				
Authorizations for mineral materials include: exploration permits, exclusive sale contracts, free use permits, community pits, and common use areas. As used herein, the term *disposal* is used as inclusive of any mineral material authorization, because exploration permits would not be issued in areas closed to disposals. Existing disposals would continue to be subject to the existing stipulations and conditions for that disposal. Disposals issued or designated after the RMP is approved would be subject to the stipulations developed in the RMP. The open and closed areas for mineral material disposals would be the same as provided for oil and gas leasing, including exceptions, modifications, and waivers.				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Continue to prohibit disposal of mineral materials in WSAs, within one-quarter mile of eligible WSRs, and ACECs. Allow mineral material disposals on a case-by-case basis subject to site-specific environmental analysis outside of these areas.	• Manage disposal of mineral materials as shown on Map 2-40. • Areas closed to mineral material disposals (WSAs): – 446,900 acres • Areas open to disposal of mineral materials subject to standard conditions of approval: – 860,600 acres • Areas open to disposal of mineral materials subject to CSU and/or timing limitations: – 820,500 acres • Areas open to disposal of mineral materials subject to NSO: – 0 acres	• Manage disposal of mineral materials as shown on Map 2-41. • Allow no disposal of mineral materials in WSAs, non-WSA lands with wilderness characteristics, and within one-quarter mile of the high water mark on each bank of the Fremont Gorge suitable WSR. • Areas closed to mineral material disposals: – 601,800 acres • Areas open to disposal of mineral materials subject to standard conditions of approval: – 608,700 acres • Areas open to disposal of mineral materials subject to CSU and/or	• Manage disposal of mineral materials as shown on Map 2-42. • Allow no disposal of mineral materials in WSAs, within one-quarter mile of suitable WSRs, and within the following ACECs: – Dirty Devil/North Wash ACEC – Fremont Gorge/ Cockscomb ACEC – Badlands ACEC – Henry Mountains ACEC – Horseshoe Canyon ACEC – Little Rockies ACEC – Rainbow Hills ACEC • Areas closed to mineral material disposals: – 586,300 acres • Areas open to disposal	• Manage disposal of mineral materials as shown on Map 2-43. • Allow no disposal of mineral materials in WSAs, non-WSA lands with wilderness characteristics, within one-quarter mile of suitable WSRs, and within the following ACECs: – Dirty Devil/North Wash ACEC – Fremont Gorge/ Cockscomb ACEC – Badlands ACEC – Henry Mountains ACEC – Horseshoe Canyon ACEC – Little Rockies ACEC – Rainbow Hills ACEC • Areas closed to mineral

Table 2-18. Minerals and Energy Decisions

		timing limitations: – 917,500 acres	of mineral materials subject to standard conditions of approval: – 491,900 acres • Areas open to disposal of mineral materials subject to CSU and/or timing limitations: – 901,100 acres • Areas open to disposal of mineral materials subject to NSO: – 148,700 acres	material disposals: – 1,160,500 acres • Areas open to disposal of mineral materials subject to standard conditions of approval: – 290,200 acres • Areas open to disposal of mineral materials subject to CSU and/or timing limitations: – 634,000 acres • Areas open to disposal of mineral materials subject to NSO: – 43,300 acres

2.6.3 Special Designations

Wilderness Study Areas

Table 2-19. Wilderness Study Areas Decisions

Desired Outcomes (Goals and Objectives)				
Continue to manage WSAs in a manner that does not impair their suitability for designation as wilderness in accordance with FLPMA Section 603 and the *Interim Management Policy for Lands Under Wilderness Review*.				
Issue: Interim Management of Wilderness Study Areas				
Management Action				
Common to the Proposed RMP and Draft RMP Alternatives				
Manage WSAs according to the IMP (BLM-H-8550-1). The BLM is statutorily (FLPMA Section 603(c)) required to manage these areas to protect their suitability for congressional designation to the National Wilderness Preservation System unless and until Congress either designates an area as wilderness or releases it from further consideration. The BLM's discretion to make planning decisions on management of WSAs is limited to designating WSAs as VRM Class I and determining whether the WSAs will be limited or closed to OHV use.				
Issue: Oil and Gas Leasing in WSAs				
Management Action				
Common to the Proposed RMP and Draft RMP Alternatives				
Close all WSAs to leasing pursuant to the Federal Onshore Oil and Gas Leasing Reform Act of 1987.				
Issue: Visual Resource Management and Designation in WSAs				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Manage WSAs as VRM Class I.	Designate all WSAs as VRM Class I.			
Issue: Off-Highway Vehicle Area and Route Designation in WSAs				
Management Actions				
Common to the Proposed RMP and Draft RMP Alternatives				
Where routes would remain available for motorized use within WSAs, such use could continue on a conditional basis. Use of the existing routes in the WSAs ("ways" when located within WSAs – see Glossary) could continue as long as the use of these routes does not impair wilderness suitability, as provided by the IMP (BLM 1995). If Congress designates the area as wilderness, the routes will be closed. In the interim, if use and/or non-compliance are found through monitoring efforts to impair the area's suitability for wilderness designation, BLM would take further action to limit use of the routes, or close them. The continued use of these routes, therefore, is based on user compliance and non-impairment of wilderness values.				

Table 2-19. Wilderness Study Areas Decisions

Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Continue managing WSAs as closed or limited for OHV use as identified in existing LUPs and shown on Map 2-12.	Designate WSAs as limited for OHV use as shown on Map 2-13. A total of 51.6 miles of inventoried vehicle ways would be designated for use subject to the IMP (Table 2-16, Travel Management). Where routes would remain available for motorized use within WSAs, allow such use to continue on a conditional basis. Use of the existing routes in the WSAs ("ways" when located within WSAs) could continue as long as the use of these routes did not impair wilderness suitability, as provided by the BLM Handbook 8550 (*Interim Management for Lands Under Wilderness Review*). If the Congress designates the area as wilderness, the routes would be closed. In the interim, if use and/or non-compliance were found through monitoring efforts to impair the area's suitability for wilderness designation, BLM would take further action to limit use of the routes, or close them. The continued use of these routes, therefore, is based on user compliance and non-impairment of wilderness values.	Designate the following WSAs as closed for OHV use (as shown on Map 2-14): • Little Rockies (40,700 acres) • Dirty Devil (70,500 acres) • Fiddler Butte (2,200 acres), • Fremont Gorge (2,800 acres), • French Spring/Happy Canyon (11,400 acres) • Horseshoe Canyon North (500 acres) • Horseshoe Canyon South (7,500 acres) • Mount Ellen/Blue Hills (39,700 acres) Designate the following WSAs as limited to OHV use (as shown on Map 2-14): • Bull Mountain (13,200 acres) • Mount Hillers (19,300 acres) • Mount Pennell (77,100 acres) • Dirty Devil (1,600 acres) • Fiddler Butte (71,800 acres) • Fremont Gorge (16 acres) • French Spring/Happy Canyon (12,900 acres) • Horseshoe Canyon North (1,600 acres) • Horseshoe Canyon South	Close WSAs to OHV use as shown on Map 2-15.	Close WSAs to OHV use as shown on Map 2-16.

Table 2-19. Wilderness Study Areas Decisions

		(32,400 acres) • Mount Ellen/Blue Hills (41,700 acres) *A total of 44.0 miles of inventoried vehicle ways would be designated for use subject to the IMP (*Table 2-16*).* *Implementation level decision. • Bull Mountain: 2.8 miles • Dirty Devil: 6.8 miles • Fiddler Butte: 4.1 miles • Fremont Gorge: 0.2 miles • French Spring/Happy Canyon: 3.6 miles • Horseshoe Canyon South: 5.6 miles • Little Rockies: 0.8 miles • Mount Ellen/Blue Hills: 8.7 miles • Mount Hillers: 5.0 miles • Mount Pennel: 6.4 miles		
Issue: Wilderness Study Areas if Released by Congress				
Management Action				
Common to the Proposed RMP and Draft RMP Alternatives				
Only Congress can release a WSA from wilderness consideration. Should any WSA, in part or in whole, be released from wilderness consideration, examine proposals in the released area on a case-by-case basis for consistency with the goals and objectives of the RMP decisions. Actions inconsistent with RMP goals and objectives would be deferred until completion of requisite plan amendments. Because the management direction of the released land would continue in accordance with the goals and objectives established in the RMP, no separate analysis is required in this LUP to address resource impacts if any WSAs are released by Congress.				

* *This is an implementation-level decision that cannot be protested under the planning regulations. Please see the cover letter for further information.*

Wild and Scenic Rivers

Table 2-20. Wild and Scenic Rivers Decisions

Desired Outcomes (Goals and Objectives)				
Manage to protect the outstandingly remarkable values, tentative classifications, and free-flowing nature of eligible/suitable river segments.				
Issue: Determination of Suitability of Eligible Wild and Scenic River Segments				
Management Actions				
Common to the Proposed RMP and Draft RMP Alternatives				
BLM would work with the State of Utah, local and tribal governments, and other federal agencies, in a state-wide study, to reach consensus regarding recommendations to Congress for the inclusion of rivers in the National Wild and Scenic Rivers System. Besides applying consistent criteria across agency jurisdictions, the joint study would avoid piece-mealing of river segments in logical watershed units in the state. The study would evaluate, in detail, the possible benefits and effects of designation on the local and state economies, agricultural and industrial operations and interests, outdoor recreation, natural resources (including the outstandingly remarkable values for which the river was deemed suitable), water rights, water quality, water resource planning, and access to and across river corridors within, and upstream and downstream from the proposed segments(s). Actual designation of river segments would only occur through congressional action or as a result of Secretarial decision at the request of the Governor in accordance with provisions of the Wild and Scenic Rivers Act (the Act). BLM will work with the State, local and tribal governments, and the agencies involved to coordinate its decision making on wild and scenic river issues and to achieve consistency wherever possible. BLM recognizes that water resources on most river and stream segments within the State of Utah are already fully allocated. Before stream segments that have been recommended as suitable under this Proposed RMP are recommended to Congress for designation, BLM will continue to work with affected local, state, federal, and tribal partners to identify in-stream flows necessary to meet critical resource needs, including values related to the subject segments(s). Such quantifications would be included in any recommendation for designation. BLM would then seek to jointly promote innovative strategies, community-based planning, and voluntary agreements with water users, under State law, to address those needs. Should designations occur on any river segment as a result of Secretarial or congressional action, existing rights, privileges, and contracts would be protected. Under Section 12 of the Act, termination of such rights, privileges, and contracts may happen only with the consent of the affected non-federal party. A determination by the BLM of eligibility and suitability for the inclusion of rivers on public lands to the Wild and Scenic Rivers System does not create new water rights for the BLM. Federal reserved water rights for new components of the Wild and Scenic Rivers System are established at the discretion of Congress. If water is reserved by Congress when a river component is added to the Wild and Scenic Rivers System, it would come from water that is not appropriated at the time of designation, in the amount necessary to protect features which led to the river's inclusion into the system. BLM's intent would be to leave existing water rights undisturbed and to recognize the lawful rights of private, municipal, and state entities to manage water resources under state law to meet the needs of the community. Federal law, including Section 13 of the Act and the McCarren Amendment (43 U.S.C. 666), recognizes state jurisdiction over water allocation in designated streams. Thus, it is BLM's position that existing water rights, including flows apportioned to the State of Utah interstate agreements and compacts, including the Upper Colorado River Compact, and developments of such rights would not be affected by designation or the creation of the possible federal reserved water right. BLM would seek to work with upstream and downstream water users and applicable agencies to ensure that water flows are maintained at a level sufficient to sustain the values for which affected river segments were designated.				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
• Existing LUPs contain no decisions regarding	• Recommend no eligible river segments as	Recommend and manage the following eligible river as	Recommend and manage all of the eligible rivers as suitable for inclusion in the National Wild and Scenic River System:	

Table 2-20. Wild and Scenic Rivers Decisions

WSRs. • As directed by BLM Instruction Memorandum IM-2004-196, Clarification of Policy in the BLM Manual Section 8351, Wild and Scenic Rivers, with Respect to Eligibility Criteria and Protective Management, manage all of the eligible river segments (135 miles) to protect their outstandingly remarkable values, free-flowing nature, and tentative classification, as follows: – 126.4 miles of river segments tentatively classified as "wild" – 3.25 miles of river segments tentatively classified as "scenic" – 5.4 miles of river segments tentatively classified as "recreational" • In accordance with BLM Manual 8351, make no suitability determinations for any of the eligible river segments. They would remain eligible and would be managed to protect their	suitable for inclusion in the National Wild and Scenic River System. • Provide no special management for outstandingly remarkable values.	suitable for inclusion in the National Wild and Scenic River System: • Fremont River in Fremont Gorge with a tentative classification as "wild" (5 miles)	• Dirty Devil River (54 miles)* • Beaver Wash Canyon (6.8 miles)* • Larry Canyon (4 miles)* • No Man's Canyon (7.1 miles)* • Robbers Roost Canyon (31 miles)* • Sams Mesa Box Canyon (9.5 miles)* • Twin Corral Box Canyon (9 miles)* • Fish Creek (0.25 mile) • Fremont River – Fremont Gorge (5 miles) – Below Capitol Reef National Park to Caineville Ditch Diversion (4 miles) • Maidenwater Creek (3 miles) • Quitchupah Creek (1.4 miles). *All or portions of these eligible WSRs overlay WSAs that are managed pursuant to the IMP.

Table 2-20. Wild and Scenic Rivers Decisions

outstandingly remarkable values, free-flowing nature, and tentative classification to the degree that BLM has authority (e.g., BLM lands within the corridor) and within the parameters of decisions made in the previous planning documents until such time as suitability determinations are made.				
Issue: Management of Fremont River—Fremont Gorge (5 miles)				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Manage all eligible streams to protect their outstandingly remarkable values, free-flowing nature, and tentative classification to the degree that BLM has authority (e.g., BLM lands within the corridor) and within the parameters of decisions made in the previous planning documents until such time as suitability determinations are made.	Do not manage the Fremont River—Fremont Gorge as eligible or suitable for inclusion in the National Wild and Scenic River System. Manage the river corridor in the manner identified under other resource headings for Alternative A.	Manage the Fremont River in Fremont Gorge (5 miles) as suitable for inclusion in the National Wild and Scenic River System and tentatively classified as a wild river. Management would protect the outstandingly remarkable scenic values. Specific management prescriptions within one-quarter mile of the high water mark on each bank of the river include: • Closed to oil and gas leasing • Close to OHV use • Recommend for withdrawal from mineral entry.	Manage the Fremont River in Fremont Gorge (5 miles) as suitable for inclusion in the National Wild and Scenic River System and tentatively classified as a wild river. Manage to protect the outstandingly remarkable scenic values. Specific management prescriptions within one-quarter mile of each side of the river include: • Close to oil and gas leasing • Close to OHV use • Recommend withdrawing from mineral entry.	

Table 2-20. Wild and Scenic Rivers Decisions

Issue: Management of Dirty Devil River (54 miles)				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Manage all eligible segments to protect their outstandingly remarkable values, free-flowing nature, and tentative classification to the degree that BLM has authority (e.g., BLM lands within the corridor) and within the parameters of decisions made in the previous planning documents until such time as suitability determinations are made.	Do not manage the Dirty River as eligible or suitable for inclusion in the in the National Wild and Scenic River System. Manage the river corridor in the manner identified under other resource headings for Alternative A.	Do not manage the Dirty River as eligible or suitable for inclusion in the in the National Wild and Scenic River System. Manage the river corridor in the manner identified under other resource headings for the Proposed RMP.	Manage the Dirty Devil River (54 miles) as suitable for inclusion in the National Wild and Scenic River System and tentatively classified as a wild river. Manage to protect the outstandingly remarkable values, including scenic, recreation, geologic, and fish and wildlife. Specific management prescriptions within one-quarter mile of each side of the river include: • Close to OHVs except for Poison Spring Road crossing • Close to oil and gas leasing • Recommend withdrawing from mineral entry.	
Issue: Management of Fremont River—Capitol Reef National Park to Caineville Ditch Diversion (4 miles)				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Manage all eligible streams to protect their outstandingly remarkable values, free-flowing nature, and tentative classification to the degree that BLM has authority (e.g. public lands within the corridor) and within the parameters of decisions made in the previous planning documents until such time as suitability determinations are made.	Do not manage the Fremont River—Capitol Reef National Park to Caineville Ditch Diversion as eligible or suitable for inclusion into the National Wild and Scenic River System. Manage the river corridor in the manner identified under other resource headings for Alternative A.	Do not manage the Fremont River—Capitol Reef National Park to Caineville Ditch Diversion as eligible or suitable for inclusion into the National Wild and Scenic River System. Manage the river corridor in the manner identified under other resource headings for the Proposed RMP.	Manage the Fremont River from Capitol Reef National Park to Caineville Ditch Diversion (4 miles) as suitable for inclusion in the National Wild and Scenic River System and tentatively classified as a recreational river. Manage to protect the outstandingly remarkable values, including scenic and geologic. Specific management prescriptions within one-quarter mile of each side of the river include: • Close to oil and gas leasing • Close to OHV use • Recommend withdrawing from mineral entry.	

Table 2-20. Wild and Scenic Rivers Decisions

Issue: Management of Beaver Wash Canyon (6.8 miles)				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Manage all eligible streams to protect their outstandingly remarkable values, free-flowing nature, and tentative classification to the degree that BLM has authority (e.g., BLM lands within the corridor) and within the parameters of decisions made in the previous planning documents until such time as suitability determinations are made. Beaver Wash Canyon is also located within the Beaver Wash Canyon ACEC and would be managed according to those management prescriptions.	Do not manage Beaver Wash Canyon as eligible or suitable for inclusion into the National Wild and Scenic River System. Manage the river corridor in the manner identified under other resource headings for Alternative A.	Do not manage Beaver Wash Canyon as eligible or suitable for inclusion into the National Wild and Scenic River System. Manage the river corridor in the manner identified under other resource headings for the Proposed RMP.	Manage Beaver Wash Canyon (6.8 miles) as suitable for inclusion in the National Wild and Scenic River System and tentatively classified as a wild river. Manage to protect the outstandingly remarkable values, including scenic and ecologic. Specific management prescriptions within one-quarter mile of each side of the river include: • Close to oil and gas leasing • Close to OHV use • Recommend withdrawing from mineral entry.	
Issue: Management of Larry Canyon (4 miles)				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Manage all eligible streams to protect their outstandingly remarkable values, free-flowing nature, and tentative classification to the degree that BLM has authority (e.g., BLM lands within the corridor) and within the parameters of decisions made in the previous planning documents until such time as suitability	Do not manage Larry Canyon as eligible or suitable for inclusion into the National Wild and Scenic River System. Manage the river corridor in the manner identified under other resource headings for Alternative A.	Do not manage Larry Canyon as eligible or suitable for inclusion into the National Wild and Scenic River System. Manage the river corridor in the manner identified under other resource headings for the Proposed RMP.	Manage Larry Canyon (4 miles) as suitable for inclusion in the National Wild and Scenic River System and tentatively classified as a wild river. Manage to protect the outstandingly remarkable values, including scenic, recreation, wildlife, and ecologic. Specific management prescriptions within one-quarter mile of each side of the river include: • Close to oil and gas leasing • Close to OHV use • Recommend withdrawing from mineral entry.	

Table 2-20. Wild and Scenic Rivers Decisions

determinations are made.				
Issue: Management of No Man's Canyon (7.1 miles)				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Manage all eligible streams to protect their outstandingly remarkable values, free-flowing nature, and tentative classification to the degree that BLM has authority (e.g., BLM lands within the corridor) and within the parameters of decisions made in the previous planning documents until such time as suitability determinations are made.	Do not manage No Man's Canyon as eligible or suitable for inclusion in the National Wild and Scenic River System. Manage the river corridor in the manner identified under other resource headings for Alternative A	Do not manage No Man's Canyon as eligible or suitable for inclusion in the National Wild and Scenic River System. Manage the river corridor in the manner identified under other resource headings for the Proposed RMP.	Manage No Man's Canyon (7.1 miles) as suitable for inclusion in the National Wild and Scenic River System and tentatively classified as a wild river. Manage to protect the outstandingly remarkable values, including scenic and recreation. Specific management prescriptions within one-quarter mile of each side of the river include: • Close to oil and gas leasing • Close to OHV use • Recommend withdrawing from mineral entry.	
Issue: Management of Robbers Roost Canyon (31 miles)				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Manage all eligible streams to protect their outstandingly remarkable values, free-flowing nature, and tentative classification to the degree that BLM has authority (e.g., BLM lands within the corridor) and within the parameters of decisions made in the previous planning documents until such time as suitability determinations are made.	Do not manage Robbers Roost Canyon as eligible or suitable for inclusion in the National Wild and Scenic River System. Manage the river corridor in the manner identified under other resource headings for Alternative A.	Do not manage Robbers Roost Canyon as eligible or suitable for inclusion in the National Wild and Scenic River System. Manage the river corridor in the manner identified under other resource headings for the Proposed RMP.	Manage Robbers Roost Canyon (31 miles) as suitable for inclusion in the National Wild and Scenic River System and tentatively classified as a wild river. Manage to protect the outstandingly remarkable values, including scenic, recreation, and cultural (historic). Specific management prescriptions within one-quarter mile of each side of the river include: • Close to oil and gas leasing • Close to OHV use • Recommend withdrawing from mineral entry.	

Table 2-20. Wild and Scenic Rivers Decisions

Issue: Management of Sams Mesa Box Canyon (9.5 miles)				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Manage all eligible streams to protect their outstandingly remarkable values, free-flowing nature, and tentative classification to the degree that BLM has authority (e.g., BLM lands within the corridor) and within the parameters of decisions made in the previous planning documents until such time as suitability determinations are made.	Do not manage Sams Mesa Box Canyon as eligible or suitable for inclusion in the National Wild and Scenic River System. Manage the river corridor in the manner identified under other resource headings for Alternative A.	Do not manage Sams Mesa Box Canyon as eligible or suitable for inclusion in the National Wild and Scenic River System. Manage the river corridor in the manner identified under other resource headings for the Proposed RMP.	Manage Sams Mesa Box Canyon (9.5 miles) as suitable for inclusion in the National Wild and Scenic River System and tentatively classified as a wild river. Manage to protect the outstandingly remarkable values including scenic and wildlife. Specific management prescriptions within one-quarter mile of each side of the river include: • Close to oil and gas leasing • Close to OHV use • Recommend withdrawing from mineral entry.	
Issue: Management of Twin Corral Box Canyon (9 miles)				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Manage all eligible streams to protect their outstandingly remarkable values, free-flowing nature, and tentative classification to the degree that BLM has authority (e.g., BLM lands within the corridor) and within the parameters of decisions made in the previous planning documents until such time as suitability determinations are made.	Do not manage Twin Corral Box Canyon as eligible or suitable for inclusion in the National Wild and Scenic River System. Manage the river corridor in the manner identified under other resource headings for Alternative A.	Do not manage Twin Corral Box Canyon as eligible or suitable for inclusion in the National Wild and Scenic River System. Manage the river corridor in the manner identified under other resource headings for the Proposed RMP.	Manage Sams Twin Corral Box Canyon (9 miles) as suitable for inclusion in the National Wild and Scenic River System and tentatively classified as a wild river. Manage to protect the outstandingly remarkable values, including scenic and wildlife. Specific management prescriptions within one-quarter mile of the river include: • Close to oil and gas leasing • Close to OHV use • Recommend withdrawing from mineral entry.	

Table 2-20. Wild and Scenic Rivers Decisions

Issue: Management of Fish Creek (one-quarter mile)				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Manage eligible streams to protect their outstandingly remarkable values, free-flowing nature, and tentative classification to the degree that BLM has authority (e.g., BLM lands within the corridor) and within the parameters of decisions made in the previous planning documents until such time as suitability determinations are made.	Do not manage Fish Creek as eligible or suitable for inclusion in the National Wild and Scenic River System. Manage the river corridor in the manner identified under other resource headings for Alternative A.	Do not manage Fish Creek as eligible or suitable for inclusion in the National Wild and Scenic River System. Manage the river corridor in the manner identified under other resource headings for the Proposed RMP.	Manage Fish Creek (one-quarter mile) as suitable for inclusion in the National Wild and Scenic River System and tentatively classified as a scenic river. Manage to protect the outstandingly remarkable cultural resource values. Specific management prescriptions within one-quarter mile of each side of the river include: • Close to oil and gas leasing • Close to OHV use • Recommend withdrawing from mineral entry.	
Issue: Management of Maidenwater Creek (3 miles)				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Manage eligible streams to protect their outstandingly remarkable values, free-flowing nature, and tentative classification to the degree that BLM has authority (e.g., BLM lands within the corridor) and within the parameters of decisions made in the previous planning documents until such time as suitability determinations are made.	Do not manage Maidenwater Creek as eligible or suitable for inclusion in the National Wild and Scenic River System. Manage the river corridor in the manner identified under other resource headings for Alternative A.	Do not manage Maidenwater Creek as eligible or suitable for inclusion in the National Wild and Scenic River System. Manage the river corridor in the manner identified under other resource headings for the Proposed RMP.	Manage Maidenwater Creek (3 miles) as suitable for inclusion in the National Wild and Scenic River System and tentatively classified as a scenic river. Manage to protect the outstandingly remarkable values, including scenic, recreation, geologic, fish, wildlife, and cultural. Specific management prescriptions within one-quarter mile of the river include: • Close to oil and gas leasing • Close to OHV use • Recommend withdrawing from mineral entry.	

Table 2-20. Wild and Scenic Rivers Decisions

Issue: Management of Quitchupah Creek (1.4 miles)				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Manage all eligible streams to protect their outstandingly remarkable values, free-flowing nature, and tentative classification to the degree that BLM has authority (e.g., BLM lands within the corridor) and within the parameters of decisions made in the previous planning documents until such time as suitability determinations are made.	Do not manage Quitchupah Creek as eligible or suitable for inclusion in the National Wild and Scenic River System. Manage the river corridor in the manner identified under other resource headings for Alternative A.	Do not manage Quitchupah Creek as eligible or suitable for inclusion in the National Wild and Scenic River System. Manage the river corridor in the manner identified under other resource headings for the Proposed RMP.	Manage Quitchupah Creek (1.4 miles) as suitable for inclusion in the National Wild and Scenic River System and tentatively classified as a recreational river. Manage to protect the outstandingly remarkable values, including cultural. Specific management prescriptions within one-quarter mile of the river include: • Close to oil and gas leasing • Close to OHV use • Recommend withdrawing from mineral entry.	

Areas of Critical Environmental Concern

Table 2-21. Areas of Critical Environmental Concern Decisions

Desired Outcomes (Goals and Objectives)				
Manage ACECs with special management attention to protect and prevent irreparable damage to important historic, cultural, or scenic values; fish, wildlife, and plant resources, or other natural system or processes; or to protect life and safety from natural hazards.				
Issue: Designation and Management of Areas of Critical Environmental Concern				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Continue designation and management of four existing ACECs (Map 3-16): • North Caineville Mesa (2,200 acres) • South Caineville Mesa (4,100 acres)* • Gilbert Badlands (3,680 acres)* • Beaver Wash Canyon (4,800 acres)* Total acres: 14,780 *All or portions of these potential ACECs overlay WSAs, which are managed pursuant to the IMP.	Designate no ACECs.	Designate and manage the following areas as ACECs (Map 2-45): • North Caineville Mesa (2,200 acres) • Old Woman Front (330 acres) Total acres: 2,530	Designate and manage the following areas as ACECs (Map 2-46): • Badlands (includes existing North and South Caineville Mesas and Gilbert Badlands ACECs, 88,900 acres)* • Bull Creek Archaeological District (4,800 acres) • Dirty Devil (includes Beaver Wash Canyon ACEC, 205,300 acres)* • Fremont Gorge/Cockscomb (34,300 acres)* • Henry Mountains (includes No Man's Mesa Potential ACEC, 288,200 acres)* • Horseshoe Canyon (Richfield RFO portion only, 40,900 acres)* • Kingston Canyon (22,100 acres) • Little Rockies (49,200 acres)* • Lower Muddy Creek (Richfield RFO only, 16,200 acres) • Old Woman Front (330 acres) • Parker Mountain (107,900 acres) • Quitchupah (180 acres) • Rainbow Hills (4,000 acres) • Sevier Canyon (8,900 acres) • Thousand Lakes Bench (500 acres) • SSS (15,100 acres)* Total acres: 886,810	

Table 2-21. Areas of Critical Environmental Concern Decisions

			*All or portions of these potential ACECs overlay WSAs, which are managed pursuant to the IMP.	
Issue: Designation and Management of North Caineville Mesa ACEC (2,200 acres)				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Continue designation of the North Caineville Mesa ACEC (Map 3-16). Manage to protect the relevant and important relict vegetation values: • Allow no uses that would cause irreparable damage to relevant and important values • Close to OHV use • Manage as closed to oil and gas leasing • Designate as unavailable for livestock grazing • Identify area as withdrawn from consideration for leasing for surface coal mining • Acquire inholdings within ACEC • Consider withdrawing from mineral entry.	• Do not designate the North Caineville Mesa ACEC. • Manage the North Caineville Mesa area in the manner identified under other resource headings for Alternative A.	Continue designation of the North Caineville Mesa ACEC (Map 2-45). Manage to protect the relevant and important relict vegetation values: • Allow no uses that would cause irreparable damage to relevant and important values • Close to OHV use • Manage as open to oil and gas leasing with major constraints (NSO) • Designate as unavailable for livestock grazing • Identify area as unsuitable for surface coal mining • Acquire inholdings within ACEC • Recommend withdrawing from mineral entry.	Manage the North Caineville Mesa area as part of the Badlands ACEC. (See the Badlands ACEC for special management prescriptions.)	

Table 2-21. Areas of Critical Environmental Concern Decisions

Issue: Designation and Management of South Caineville Mesa ACEC (4,100 acres)				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Continue designation of the South Caineville Mesa ACEC (Map 3-16). Manage the area to protect the relevant and important values: • Allow no uses that would cause irreparable damage to relevant and important values • Close to OHV use • Manage as open to oil and gas leasing with major constraints (NSO) • Unavailable for livestock grazing • Identify area as withdrawn from consideration for leasing for surface coal mining • Nominate cabin on South Caineville Mesa to NRHP • Increase public awareness of cultural resources, increase law enforcement presence, and if necessary, fence or otherwise directly protect important sites,	• Do not designate the South Caineville Mesa ACEC. • Manage the South Caineville Mesa area in the manner identified under other resource headings for Alternative A.	• Do not designate the South Caineville Mesa ACEC. • Manage the South Caineville Mesa area in the manner identified under other resource headings for The Proposed RMP.	Manage the South Caineville Mesa area as part of the Badlands ACEC. (See the Badlands ACEC for special management prescriptions.)	

Table 2-21. Areas of Critical Environmental Concern Decisions

and maintain stability of cabin on South Caineville Mesa • Consider withdrawal from mineral entry if area is released from wilderness consideration.				
Issue: Designation and Management of Beaver Wash Canyon ACEC (4,800 acres)				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Continue Beaver Wash Canyon ACEC designation, to be managed for protection of relevant and important ecologic (riparian) values (Map 3-16). Manage Beaver Wash with the following special management to protect the relevant and important values from irreparable damage: • Close to OHV use • Close to oil and gas leasing Pursue land tenure adjustment, including acquisition through exchange of all state sections in the area • Designate as unavailable for livestock grazing from south boundary of Section 25 northward • Recommend	• Do not designate the Beaver Wash Canyon ACEC. • Manage the Beaver Wash Canyon area in the manner identified under other resource headings for Alternative A.	• Do not designate the Beaver Wash Canyon ACEC. • Manage the Beaver Wash Canyon area in the manner identified under other resource headings for the Proposed RMP.	Manage the Beaver Wash Canyon area as part of the Dirty Devil ACEC. See Dirty Devil ACEC (below) for special management prescriptions.	

Table 2-21. Areas of Critical Environmental Concern Decisions

withdrawing from mineral entry			

Table 2-21. Areas of Critical Environmental Concern Decisions

Issue: Designation and Management of Gilbert Badlands ACEC (3,680 acres)				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Continue Gilbert Badlands ACEC and RNA designations, to be managed for protection of relevant and important natural systems or processes and in accordance with 43 CFR 8223.1 (Map 3-16). Manage the Gilbert Badlands ACEC with the following special management to protect the relevant and important values from irreparable damage: • Close to OHV use • Manage as closed to oil and gas leasing • Consider withdrawing from mineral entry • Prohibit all surface disturbing activities • Acquire in-holdings within ACEC.	• Do not designate the Gilbert Badlands ACEC or RNA. • Manage the Gilbert Badlands area in the manner identified under other resource headings for Alternative A.	• Do not designate the Gilbert Badlands ACEC or RNA. • Manage the Gilbert Badlands area in the manner identified under other resource headings for the Proposed RMP.	Manage the Gilbert Badlands area as part of the Badlands ACEC. (See the Badlands ACEC for special management prescriptions.)	
Issue: Designation and Management of Potential Badlands ACEC (88,900 acres)				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
Continue managing the existing North Caineville, South Caineville, and Gilbert Badlands ACECs to protect their relevant and important values as prescribed above.	• Do not designate the Badlands ACEC or Research Natural Area. • Manage identified under other resource headings	• Do not designate the Badlands ACEC or Research Natural Area. • Manage identified	Designate the Badlands ACEC and RNA, to be managed to protect relevant and important values, including scenic, special status plants, natural processes, and riparian and relict vegetation from irreparable damage (Map 2-46). Special management of the area to protect these values includes:	

Table 2-21. Areas of Critical Environmental Concern Decisions

	for Alternative A.	under other resource headings for the Proposed RMP.	• Allow no uses that would cause irreparable damage to relevant and important values. **Vegetation** • Continue unavailability for grazing on North and South Caineville Mesas to protect relict vegetation. **Cultural Resources** • Increase public awareness of cultural resources, increase law enforcement presence, and if necessary, fence or otherwise directly protect important sites, and maintain stability of cabin on South Caineville Mesa. Fencing or other surface disturbing activities would not be allowed in non-WSA lands with wilderness characteristics in Alternative D. **Visual Resources** • Designate Class A scenery (outside of WSAs and outside of non-WSA lands with wilderness characteristics [Alternative D only]) as VRM Class II, and implement VRM BMPs. **Special Status Species** • Increase law enforcement patrols, educate the public about values of listed cacti, evaluate proposed upstream water developments to determine impacts on fish species, and, based on that evaluation, take appropriate action to protect SSS. **Travel Management** • Close mesa tops to OHV use. In Alternative D, close non-WSA lands with wilderness characteristics to OHV use. Limit OHV use to designated routes in the remainder of the ACEC to prevent irreparable damage to cultural resources, badlands topography, listed species of cacti, and scenic values. **Lands and Realty** • Recommend withdrawing the non-WSA lands with wilderness characteristics (Alternative D only) and Class A scenery outside WSA from mineral entry. **Minerals**

Table 2-21. Areas of Critical Environmental Concern Decisions

			• Close to oil and gas leasing.	
Issue: Management of Potential Bull Creek Archaeological ACEC (4,800 acres)				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
• Do not designate the Bull Creek Archaeological District as an ACEC. • Manage the Bull Creek Archaeological District consistent with properties listed on the NRHP.			Designate the Bull Creek Archaeological District as an ACEC for the purpose of protecting relevant and important cultural resource values (Map 2-46). Special management to protect these values from irreparable damage includes: **Cultural Resources** • Increase public awareness of cultural resource values, increase law enforcement presence, and if necessary, install fencing or other direct protection of important sites. Fencing or other surface disturbing activities would not be allowed in non-WSA lands with wilderness characteristics in Alternative D. **Travel Management** • Limit OHV use to designated routes to protect cultural resources from damage. In Alternative D, close non-WSA lands with wilderness characteristics to OHV use.	
Issue: Designation and Management of Potential Dirty Devil/North Wash ACEC (205,300 acres)				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
• Manage Beaver Wash Canyon ACEC (a portion of the potential Dirty Devil ACEC) according to the management prescriptions outlined above for that ACEC. • Manage remainder of the potential Dirty Devil ACEC according to other decisions outlined in the 1982 Henry	• Do not designate the Dirty Devil/North Wash potential ACEC. • Manage the Dirty Devil/North Wash area in the manner identified under other resource headings for Alternative A.	• Do not designate the Dirty Devil/North Wash potential ACEC. • Manage the area included in the Dirty Devil SRMA, according to those prescriptions. Manage areas not included within the Dirty Devil SRMA in the manner identified under other resource headings for	Designate the Dirty Devil/North Wash area as an ACEC for protection of relevant and important values, including scenic, cultural, paleontological, wildlife, and SSS (Map 2-46). Special management for protection of these values includes: **Prevent Irreparable Damage** • Allow no uses that would cause irreparable damage to relevant and important values. **Riparian** • Restore, maintain, and improve riparian areas to proper functioning condition (PFC). • Fence riparian areas to exclude livestock. Fencing or	

Table 2-21. Areas of Critical Environmental Concern Decisions

Mountain MFP, as amended.		the Proposed RMP.	other surface disturbing activities would not be allowed in non-WSA lands with wilderness characteristics in Alternative D. • Rehabilitate springs. • Plant willows and cottonwoods. **Fire and Fuels Management** • Allow no prescribed or wildland fire use in Mexican spotted owl core areas and nest protection areas at any time. • Suppress wildfires that threaten Mexican spotted owl core areas and nest protection areas. **Cultural Resources** • Reduce vandalism of cultural resources by increasing public awareness of their value, increasing law enforcement presence and, if necessary, fencing or otherwise directly protecting important sites. Fencing or other surface disturbing activities would not be allowed in non-WSA lands with wilderness characteristics in Alternative D. **Visual Resources** • Designate Class A scenery outside of WSAs (Alternatives C and D) and outside of non-WSA lands with wilderness characteristics (Alternative D) as VRM Class II. • Designate remainder of ACEC (outside of non-WSA lands with wilderness characteristics— Alternative D only) as VRM Class III. • Implement BMPs appropriate to the VRM class to protect scenic values. **Special Status Species** • Manage the Mexican spotted owl in cooperation with USFWS and UDWR. • Restrict motorized access in sensitive plant areas. • Increase law enforcement patrols. **Wildlife**

Table 2-21. Areas of Critical Environmental Concern Decisions

			• Manage Desert bighorn sheep in cooperation with UDWR. • Allow water developments that would benefit Desert bighorn sheep. Water developments would not be allowed in non-WSA lands with wilderness characteristics (Alternative D only). **Livestock grazing** • Permit no domestic sheep grazing to protect bighorn sheep from disease. • Keep Beaver Wash unavailable for grazing to protect riparian values. **Recreation** • Construct no camping facilities in the Mexican spotted owl nest protection core areas or within non-WSA lands with wilderness characteristics (Alternative D only). • Reduce harassment of bighorn sheep and Mexican spotted owls by regulating the number of recreational parties, party size, and season of use. • Limit recreation use through use of permits, if determined necessary to protect relevant and important values. **Travel Management** • Limit OHVs to designated routes to protect scenic values. During management plan development for this ACEC, OHV route designations would be reviewed and revised if necessary (with appropriate NEPA review) to protect scenic values. In Alternative D, close non-WSA lands with wilderness characteristics to OHV use. • Discourage recreation use within one-half mile of known Mexican spotted owl nest sites during breeding season (February 1 to August 31). **Lands and Realty** • Avoid authorizing ROWs in VRM Class I or II areas. • Retain ACEC in public ownership. • Acquire inholdings within the ACEC from willing sellers.

Table 2-21. Areas of Critical Environmental Concern Decisions

			• Recommend withdrawing Class A scenery designated as VRM Class II from mineral entry. **Minerals** • Manage VRM Class II areas as open to oil and gas leasing with major constraints, such as NSO. • Close non-WSA lands with wilderness characteristics to oil and gas leasing (Alternative D only). • Manage remainder of ACEC as open to oil and gas leasing subject to controlled surface use and/or timing limitations. • Use BMPs to protect scenic values. • Include seasonal restriction stipulations in lease permits during the Mexican spotted owl breeding season (February 1 to August 31) for all mineral development activities within one-half mile around known nest sites. • Restrict oil and gas exploration and development activities from February 1 through August 31 in Mexican spotted owl nest protection areas.
Issue: Designation and Management of Potential Fremont Gorge/Cockscomb ACEC (34,300 acres)			
Management Actions			
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C** / **Alternative D**
• Do not designate the Fremont Gorge/ Cockscomb ACEC. • Manage the Fremont Gorge/Cockscomb area in accordance with existing LUP.	• Do not designate the Fremont Gorge/ Cockscomb ACEC. • Manage the Fremont Gorge/Cockscomb area in the manner identified under other resource headings for Alternative A.	• Do not designate the Fremont Gorge/ Cockscomb ACEC. • Portions of this area are included in the Capitol Reef Gateway SRMA and the Fremont Gorge Suitable WSR corridor and would be managed according to the prescriptions identified in those sections. Areas not included within the	Designate the Fremont Gorge/Cockscomb area as an ACEC for protection of relevant and important values, including cultural, scenic, riparian, plant, and wildlife (Map 2-46). Special management for protection of these values includes: **Prevent Irreparable Damage** • Allow no uses that would cause irreparable damage to relevant and important values. **Riparian** • Evaluate proposed upstream water developments to determine possible adverse impacts on riparian areas. • Limit recreation use in riparian areas, if needed to protect riparian values. **Cultural Resources**

Table 2-21. Areas of Critical Environmental Concern Decisions

		Capitol Reef Gateway SRMA and Fremont Gorge WSR corridor would be managed in the manner identified under other resource headings for the Proposed RMP.	• Reduce vandalism of cultural resources by increasing public awareness of their value, increasing law enforcement presence, and, if necessary, fencing or otherwise directly protecting important sites. Fencing or other surface disturbing activities would not be allowed in non-WSA lands with wilderness characteristics under Alternative D. **Visual Resources** • Designate Class A scenery outside of WSAs (Alternatives C and D) and outside of non-WSA lands with wilderness characteristics (Alternative D) as VRM Class II. • Designate remainder of ACEC (outside of non-WSA lands with wilderness characteristics— Alternative D only) as VRM Class III. • Implement VRM BMPs appropriate to VRM Class to protect scenic values. **Fire** • Suppress wildfire in crucial mule deer habitat containing browse species. **Recreation** • Limit recreation use in Fish Creek Cove and Beas Lewis Flats to protect cultural resources, if needed. **Travel Management** • Manage OHVs as limited to designated routes to protect scenic values. In Alternative D, close non-WSA lands with wilderness characteristics to OHV use. **Lands and Realty** • Maintain crucial mule deer habitat in public ownership. • Recommend withdrawing Class A scenery outside WSA and non-WSA lands with wilderness characteristics (Alternative D only) from mineral entry. **Minerals** • Manage VRM II areas as open to oil and gas leasing with major constraints, such as NSO.

Table 2-21. Areas of Critical Environmental Concern Decisions

			• Manage VRM III areas as open to leasing subject to CSU and/or timing limitations. • Manage VRM Class I areas in non-WSA lands with wilderness characteristics (Alternative D only) as closed to oil and gas leasing.	
Issue: Designation and Management of Proposed Henry Mountains ACEC (288,200 acres)				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
• Do not designate the Henry Mountains ACEC. • Manage the Henry Mountains area in accordance with the existing LUP (Alternative N) and in the manner identified under other resource headings for Alternative A and the Proposed RMP.			Designate the Henry Mountains area as an ACEC for protection of relevant and important values, including wildlife (e.g., bison and deer), SSS (e.g., Townsend's big-eared bat, ferruginous hawk, burrowing owl, hole-in-the-rock prairie clover, Dana's milkvetch, and Barneby milkvetch), scenic, and ecological values (Map 2-46). Special management for protection of these values includes: **Prevent Irreparable Damage** • Allow no uses that would cause irreparable damage to relevant and important values. **Riparian** • Restore, maintain, and improve riparian areas to bring them into PFC. Surface disturbing activities would not be allowed in non-WSA lands with wilderness characteristics under Alternative D. • Maintain erosion control structures in Nasty Flat area. **Vegetation** • Manage vegetation to benefit mule deer and bison habitat. • Manage No Man's Mesa to protect relict vegetation. **Cultural Resources** • Reduce vandalism of cultural resources by increasing public awareness of their value, increasing law enforcement presence and, if necessary, fencing or otherwise directly protecting important sites. Fencing or other surface disturbing activities would not be allowed in non-WSA lands with wilderness characteristics under	

Table 2-21. Areas of Critical Environmental Concern Decisions

	Alternative D. • Close Starr Ranch to recreation/interpretation use until stabilization can be accomplished. **Visual Resources** • Designate Class A scenery outside of WSAs (Alternatives C and D) and outside of non-WSA lands with wilderness characteristics (Alternative D) as VRM Class II. • Designate remainder of ACEC as VRM Class III to allow manipulation of habitat to benefit wildlife and mule deer; in all cases, apply appropriate VRM class BMPs. **Special Status Species** • Restrict motorized access in sensitive plant areas. • Increase law enforcement patrols. **Wildlife** • Manage mule deer and bison habitat in cooperation with UDWR. • Allow manipulation of habitat to benefit wildlife. Surface disturbing activities would not be allowed in non-WSA lands with wilderness characteristics in Alternative D. • Allow range improvements that benefit wildlife. Fencing or other surface disturbing activities would not be allowed in non-WSA lands with wilderness characteristics under Alternative D. • Develop a Habitat Management Plan for bison and mule deer within the ACEC. **Fire and Fuels Management** • Use appropriate management response to protect and enhance relevant and important values. • Suppress all wildfires near Starr Ranch to protect historical values. **Livestock Grazing** • Change class of livestock on the Pennell Allotment from sheep to cattle.

Table 2-21. Areas of Critical Environmental Concern Decisions

	Recreation • Allow continued maintenance, upgrade, and use of existing campgrounds and picnic facilities within the ACEC at Starr Springs, Lonesome Beaver, McMillan Spring, and Dandelion Flat. Additional recreation facilities may be developed in response to user demand and for resource protection if it would not cause irreparable damage to relevant and important values. **Travel Management** • Limit OHV use in the Nasty Flat area to designated routes. • Limit OHV use to designated routes to protect scenic and cultural resources and bison habitat. During management plan development for this ACEC, OHV route designations would be reviewed and revised if necessary (with appropriate NEPA review) to protect these relevant and important values. • Close No Man's Mesa to OHVs. In Alternative D, close non-WSA lands with wilderness characteristics to OHV use. **Lands and Realty** • Authorize no ROWs in VRM Class I and II areas. • Retain ACEC in public ownership. • Acquire inholdings from willing sellers within the ACEC. • Recommend withdrawing No Man's Mesa and areas with Class A scenery designated as VRM Class II from mineral entry. **Minerals** • Manage VRM Class II areas and non-WSA lands with wilderness characteristics (Alternative D only) as closed to oil and gas leasing. • Manage VRM Class III areas as open to oil and gas leasing subject to controlled surface use and/or timing limitations. • Close No Man's Mesa to oil and gas leasing.

Table 2-21. Areas of Critical Environmental Concern Decisions

Issue: Designation and Management of Potential Horseshoe Canyon ACEC (40,900 acres—RFO only)				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
• Do not designate the Horseshoe Canyon ACEC. • Manage the Horseshoe Canyon area in accordance with the existing LUP (Alternative N) and in the manner identified under other resource headings for Alternatives A and the Proposed RMP.			Designate the Horseshoe Canyon area as an ACEC for protection of relevant and important values including scenic, cultural (e.g., Cowboy Cave), riparian, and SSS (e.g., Townsend's big-eared bat) (Map 2-46). Special management for protection of these values includes: **Prevent Irreparable Damage** • Allow no uses that would cause irreparable damage to relevant and important values. **Riparian** • Rehabilitate springs to bring them into PFC. • Plant willows and cottonwoods in riparian areas. **Cultural Resources** • Reduce vandalism of cultural resources by increasing public awareness of their value, increasing law enforcement presence and, if necessary, fencing or otherwise directly protecting important sites. Fencing or other surface disturbing activities would not be allowed in non-WSA lands with wilderness characteristics in Alternative D. **Visual Resources** • Designate Class A scenery outside of WSAs (Alternatives C and D) and outside of non-WSA lands with wilderness characteristics (Alternative D) as VRM Class II. **Livestock Grazing** • Fence riparian areas to exclude livestock. Fencing or other surface disturbing activities would not be allowed in non-WSA lands with wilderness characteristics in Alternative D. **Recreation** • Limit recreation use through use of permits, if needed, to protect sensitive resources.	

Table 2-21. Areas of Critical Environmental Concern Decisions

			Travel Management • Limit OHVs to designated routes to protect scenic, SSSSSS, and cultural values. During management plan development for this ACEC, OHV route designations would be reviewed and revised if necessary (with appropriate NEPA review) to protect these relevant and important values. In Alternative D, close non-WSA lands with wilderness characteristics to OHV use. **Lands and Realty** • Authorize no new ROWs in VRM Class I and II areas. • Retain ACEC in public ownership. • Acquire inholdings from willing sellers within the ACEC. • Recommend withdrawing areas with Class A scenery designated as VRM Class II from mineral entry. **Minerals** • Manage VRM Class II areas as open to oil and gas leasing with major constraints, such as NSO. • Manage VRM Class I areas in non-WSA lands with wilderness characteristics (Alternative D only) as closed to oil and gas leasing.
Issue: Designation and Management of Potential Kingston Canyon ACEC (22,100 acres)				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
• Do not designate the Kingston Canyon ACEC. • Manage the Kingston Canyon area in accordance with the existing LUP (Alternative N) and in the manner identified under other resource headings for Alternative A and the Proposed RMP (such as non-WSA lands with wilderness characteristics).			Designate and manage the Kingston Canyon area as an ACEC for protection of relevant and important values including riparian and mule deer habitat (Map 2-46). Special management for protection of these values includes: **Prevent Irreparable Damage** • Allow no uses that would cause irreparable damage to relevant and important values. **Fire** • Suppress wildfire in crucial deer winter range. **Travel Management**	

Table 2-21. Areas of Critical Environmental Concern Decisions

			• Limit OHV use to designated routes. • In Alternative D, close non-WSA lands with wilderness characteristics to OHV use. • Limit OHV use with seasonal closures (December 15 through April 15) to protect mule deer habitat. **Lands and Realty** • Acquire in-holdings in the riparian corridor. • Retain the ACEC in public ownership.	
Issue: Designation and Management of Potential Little Rockies ACEC (49,200 acres)				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
• Do not designate the Little Rockies ACEC. • Manage the Little Rockies area in accordance with the existing LUP (Alternative N) and in the manner identified under other resource headings for Alternative A and the Proposed RMP.			Designate the Little Rockies area as an ACEC for protection of relevant and important values, including scenic and wildlife values, notably Desert bighorn sheep and Townsend's big-eared bat, special status plant species, including hole-in-the-rock prairie clover, and ecologic values (Map 2-46). Special management for protection of these values includes: **Prevent Irreparable Damage** • Allow no uses that would cause irreparable damage to relevant and important values. **Visual Resources** • Designate Class A scenery outside of WSAs (Alternatives C and D) and outside of non-WSA lands with wilderness characteristics (Alternative D) as VRM Class II. **Wildlife** • Manage Desert bighorn sheep in cooperation with UDWR in accordance with the Henry Mountains Desert Bighorn Habitat Management Plan, as revised. • Continue to cooperate with UDWR in transplants of Desert bighorn sheep into the area consistent with carrying capacity. • Allow range improvements that would benefit Desert bighorn sheep, primarily water developments. Surface	

Table 2-21. Areas of Critical Environmental Concern Decisions

	disturbing activities would not be allowed in non-WSA lands with wilderness characteristics under Alternative D. **Livestock Grazing** • Convert domestic sheep use in Trachyte Allotment to cattle to prevent transmitting disease to Desert bighorn sheep. **Recreation** • Regulate recreation impacts by limiting party size, season of use, and/or location to minimize harassment of Desert bighorn sheep, if needed. • Limit recreation access and party size in Maidenwater and Trachyte canyons to protect ecological values, if needed. **Travel Management** • Limit OHV use to designated routes. In Alternative D, close non-WSA lands with wilderness characteristics to OHV use. **Lands and Realty** • Authorize no new ROWs in non-WSA lands with wilderness characteristics (Alternative D only) or in areas with Class A scenery. • Retain ACEC in public ownership. • Acquire inholdings from willing sellers within the ACEC. • Recommend withdrawing Class A scenery designated as VRM Class II from mineral entry. **Minerals** • Manage VRM II areas as open to oil and gas leasing with major constraints, such as NSO. • Close in non-WSA lands with wilderness characteristics (Alternative D only) to oil and gas leasing.

Table 2-21. Areas of Critical Environmental Concern Decisions

Issue: Designation and Management of Potential Lower Muddy Creek ACEC (16,200 acres—RFO portion)				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
• Do not designate the Lower Muddy Creek ACEC. • Manage the Lower Muddy Creek area in accordance with the existing LUP (Alternative N) and in the manner identified under other resource headings for Alternative A and the Proposed RMP.			Designate the Lower Muddy Creek area as an ACEC for protection of relevant and important values, including scenic, riparian, and special status plant (e.g., Wright fishhook and Heil's beavertail cacti) values (Map 2-46). Special management for protection of these values includes: **Prevent Irreparable Damage** • Allow no uses that would cause irreparable damage to relevant and important values. **Visual Resources** • Designate Class A scenery outside of WSAs (Alternatives C and D) and outside of non-WSA lands with wilderness characteristics (Alternative D) as VRM Class II. **Special Status Species** • Increase law enforcement patrols to deter illegal cacti collecting. • Increase public education. **Travel Management** • Limit OHVs to designated routes to protect listed plant species. During management plan development for this ACEC, OHV route designations would be reviewed and revised if necessary (with appropriate NEPA review) to protect listed plant species. In Alternative D, close non-WSA lands with wilderness characteristics to OHV use. **Lands and Realty** • Authorize ROWs consistent with VRM Class II objectives. No new ROWs would be authorized in non-WSA lands with wilderness characteristics (Alternative D only). • Retain ACEC in public ownership. • Acquire inholdings within the ACEC from willing sellers.	

Table 2-21. Areas of Critical Environmental Concern Decisions

			Minerals • Close area to oil and gas leasing.	
Issue: Designation and Management of Potential Old Woman Front ACEC (330 acres)				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
• Do not designate the Old Woman Front ACEC and RNA. • Manage the Old Woman Front area in accordance with the existing LUP (Alternative N) and in the manner identified under other resource headings for Alternative A.		Designate the Old Woman Front area as an RNA ACEC for protection of the relevant and important values of relict vegetation. • Coordinate special management for protection of relict vegetation with the USFS Old Woman Cove RNA Plan. • Manage the area for multiple use, while protecting the relict vegetation. **Ecological Processes** • Permit no human activities that directly or indirectly modify ecological processes. **Wildlife** • Allow no wildlife habitat manipulation. • Prohibit the introduction or spread of exotic animal species. **Fire and Fuels Management** • Allow wildland fire use within the parameters of an approved fire plan and only under a prescription designed to accomplish the objectives of the area. • Suppress fires using minimal impact tools and techniques. • Avoid the use of heavy equipment. • Avoid post-fire rehabilitation; if needed, use seed of indigenous species, and locally adapted ecotypes. **Forest Products** • Allow no logging or harvest of woodland products, fuelwood gathering, or Christmas tree cutting. **Livestock Grazing** • Unavailable for livestock grazing. • Construct no range improvements. **Recreation** • Issue no SRPs. **Travel Management**		

Table 2-21. Areas of Critical Environmental Concern Decisions

		• Close area to OHV use. **Facilities** • Authorize no roads, new trails, fences, signs, buildings, or other physical improvements. **Lands and Realty** • Recommend withdrawing from mineral entry. **Minerals** • Manage as open to oil and gas leasing with major constraints, such as NSO.		
Issue: Designation and Management of Potential Parker Mountain ACEC (107,900 acres)				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
• Do not designate Parker Mountain ACEC. • Manage the Parker Mountain area in accordance with the existing LUP (Alternative N) and in the manner identified under other resource headings for Alternatives A and the Proposed RMP. Continue to consider ongoing land management practices, vegetative treatments, and grazing regimes, and continue to coordinate management efforts with Parker Mountain Adaptive Resource Management (PARM), BLM, UDWR, USFWS, and Utah State University to address vegetative treatments specific to improving the sagebrush-steppe community.			Designate Parker Mountain area as an ACEC for protection of relevant and important values, including sagebrush-steppe habitat and wildlife values, notably the Greater sage-grouse, Utah prairie dog, and pygmy rabbit (Map 2-46). Special management for protection of these values includes: **Prevent Irreparable Damage** • Allow no uses that would cause irreparable damage to relevant and important values. **Vegetation** • Actively manage invasive species. • Evaluate potential vegetation treatments to ensure they are beneficial to sagebrush-steppe habitat and pygmy rabbits, Greater sage-grouse, and Utah prairie dogs. **Wildlife** • Educate hunters on pygmy rabbit identification. **Fire and Fuels Management** • Suppress wild fire in sagebrush-steppe habitat. **Livestock Grazing** • Continue to implement proper grazing management through coordination with PARM. • Base stocking rates on timing and amount of precipitation and the condition of the range.	

Table 2-21. Areas of Critical Environmental Concern Decisions

<table>
<tr><td colspan="3"></td><td colspan="2">Travel Management
• Limit OHV use to designated routes.
Lands and Realty
• Retain ACEC in public ownership.
• Acquire inholdings within the ACEC from willing sellers.</td></tr>
<tr><th colspan="5">Issue: Management of Potential Quitchupah ACEC (180 acres)</th></tr>
<tr><th colspan="5">Management Actions</th></tr>
<tr><th>Alternative N
(No Action)</th><th>Alternative A</th><th>Proposed RMP</th><th>Alternative C</th><th>Alternative D</th></tr>
<tr><td colspan="3">• Do not designate the Quitchupah ACEC.
• Manage the Quitchupah area in accordance with the existing LUP (Alternative N) and in the manner identified under other resource headings for Alternative A and the Proposed RMP.</td><td colspan="2">Designate the Quitchupah area as an ACEC for protection of relevant and important cultural and riparian values (Map 2-46). Special management for protection of these values includes:
Prevent Irreparable Damage
• Allow no uses that would cause irreparable damage to relevant and important values.
Cultural Resources
• Reduce vandalism of cultural resources by increasing public awareness of their value, increasing law enforcement presence and, if necessary, fencing or otherwise directly protecting important sites. Fencing or other surface disturbing activities would not be allowed in non-WSA lands with wilderness characteristics in Alternative D.
Travel Management
• Restrict OHV use to designated routes to protect cultural and ecological resources and riparian areas from damage. Under Alternative D, close non-WSA lands with wilderness characteristics to OHV use.
Lands and Realty
• Avoid granting new ROWs; if ROWS are granted, mitigate impacts to ACEC values. Under Alternative D, new ROWS would not be authorized in non-WSA lands with wilderness characteristics.</td></tr>
</table>

Table 2-21. Areas of Critical Environmental Concern Decisions

Issue: Designation and Management of Potential Rainbow Hills ACEC (4,000 acres)				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
• Do not designate the Rainbow Hills ACEC. • Manage the Rainbow Hills area in accordance with the existing LUP (Alternative N) and in the manner identified under other resource headings for Alternative A and the Proposed RMP.			Designate the Rainbow Hills area as an ACEC for protection of relevant and important values, including mule deer habitat, natural systems, and SSS, including Utah phacelia, Arapien stickleaf, Ward's penstemon, rainbow rabbitbrush, Sigurd townsendia, and Glenwood milkvetch (Map 2-46). Special management for protection of these values includes: **Prevent Irreparable Damage** • Allow no uses that would cause irreparable damage to relevant and important values. **Mule Deer** • Suppress wildfire in crucial mule deer winter range to protect important browse species. **Travel Management** • Close to OHV use. **Lands and Realty** • Retain ACEC in public ownership. • Acquire inholdings from willing sellers. • Avoid granting new ROWs. • Recommend withdrawing from mineral entry. **Minerals** • Allow leasing with NSO to protect special status and endemic plants and the naturally functioning system from major human disturbances.	
Issue: Designation and Management of Potential Sevier Canyon ACEC (8,900 acres)				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
• Do not designate the Sevier Canyon ACEC. • Manage the Sevier Canyon area in accordance with the existing LUP (Alternative N) and in a manner identified under other resource headings for Alternative A and the Proposed			Designate the Sevier Canyon area as an ACEC for protection of relevant and important values, including mule deer habitat, riparian, and SSS values (Map 2-46). Special management for	

Table 2-21. Areas of Critical Environmental Concern Decisions

RMP.			protection of these values includes: **Prevent Irreparable Damage** • Allow no uses that would cause irreparable damage to relevant and important values. **Fire and Fuels Management** • Suppress wildfire in crucial mule deer winter range to protect important browse species. **Travel Management** • Limit OHV use to designated routes. • Limit OHVs seasonally (December 15 through April 15) to protect mule deer habitat. **Lands and Realty** • Retain ACEC in public ownership. • Acquire inholdings from willing sellers.	
Issue: Designation and Management of Potential Thousand Lakes Bench ACEC (500 acres)				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
• Do not designate the Thousand Lakes Bench ACEC. • Manage the Thousand Lakes Bench area in accordance with the existing LUP (Alternative N) and in the manner identified under other resource heading for Alternative A and the Proposed RMP.			Designate the Thousand Lakes Bench area as an ACEC for protection of relevant and important values, including cultural resources, special status plants, and riparian areas (Map 2-46). Special management for protection of these values includes: **Prevent Irreparable Damage** • Allow no uses that would cause irreparable damage to relevant and important values. **Cultural Resources** • Reduce vandalism of cultural resources by increasing public awareness of their value, increasing law enforcement presence and, if necessary, fencing or otherwise directly protecting important sites. Fencing or other surface disturbing activities would not be allowed in non-WSA lands with wilderness characteristics under Alternative D.	

Table 2-21. Areas of Critical Environmental Concern Decisions

			Special Status Species • Increase law enforcement presence to deter collection of Wright fishhook cactus. **Travel Management** • Limit OHVs to designated routes to protect cultural resources, riparian areas, and special status plants. During management plan development for this ACEC, OHV route designations would be reviewed and revised if necessary (with appropriate NEPA review) to protect these relevant and important values. Under Alternative D, close non-WSA lands with wilderness characteristics to OHV use.	
Issue: Designation and Management of Potential Special Status Species ACEC (15,100 acres)				
Management Actions				
Alternative N (No Action)	**Alternative A**	**Proposed RMP**	**Alternative C**	**Alternative D**
• Do not designate the Special Status Species ACEC. • Manage the Special Status Species ACEC area in accordance with existing LUPs (Alternative N) and in the manner identified under other resource headings for Alternative A and the Proposed RMP. • Manage SSS and their habitats in coordination with the USFWS, UDWR, and other resource management agencies.			Designate the Special Status Species ACEC to protect relevant and important SSS values (Map 2-46). Special management for protection of these values includes: **Prevent Irreparable Damage** • Allow no uses that would cause irreparable damage to relevant and important values. **Vegetation** • Avoid or mitigate impacts to SSS and their habitats when conducting vegetative treatments. **Special Status Species** • Increase law enforcement patrols to deter collecting and poaching. **Recreation** • If monitoring shows that adverse impacts are or could occur to SSS, limit recreation use as necessary. **Travel Management** • Limit OHVs to designated routes in SSS habitat. During management plan development for this ACEC, OHV route designations would be reviewed and revised if	

Table 2-21. Areas of Critical Environmental Concern Decisions

	necessary (with appropriate NEPA review) to protect these SSS. **Lands and Realty** • Retain SSS documented locations in public ownership. • Where determined necessary to acquire important habitat for SSS, pursue acquisition of non-federal lands from willing sellers. • Avoid granting ROWs and other land use authorizations that would affect SSS and their habitats. **Minerals** • Manage SSS areas as open to oil and gas leasing subject to CSU and/or timing limitations. • Manage SSS areas as open to disposal of mineral materials subject to CSU and/or timing limitations.

2.6.4 Transportation

Table 2-22. Transportation Facilities Decisions

Desired Outcomes (Goals and Objectives)
Provide a safe and effective transportation system across public lands.
Issue: Management of Transportation Facilities
Management Actions
Common to the Proposed RMP and Draft RMP Alternatives
• As per the State of Utah v. Andrus, Oct. 1, 1979 (Cotter Decision), the BLM would grant the State of Utah reasonable access to state lands for economic purposes, on a case-by-case basis. • Continue to support Sanpete, Sevier, Piute, Garfield and Wayne counties and the State of Utah in providing a network of roads for movement of people, goods, and services across public lands. • Review requests for administrative access on a case-by-case basis. • Develop, implement, and maintain cooperative agreements with counties and the State of Utah for maintenance of the transportation system. • Require reclamation of redundant road systems and/or roads that no longer serve their intended purpose in order to reduce road density and reduce habitat fragmentation. • Manage designated scenic byway and backway corridors for the purposes for which they were designated. • Coordinate with the NPS and the State of Utah for management and interpretation of scenic byway and backway corridors. • Install directional, informational, regulatory, and interpretive signs at appropriate locations throughout the planning area. • There are a number of locations throughout the RFO that are commonly known and consistently used for aircraft landing and departure activities that, through such casual use, have evolved into backcountry airstrips (the definition contained in Section 345 of Public Law 106-914, the Interior and Related Agencies Appropriation Act of 2001). In accordance with that law, require full public notice, consultation with local and state government officials, the Federal Aviation Administration (FAA), and compliance with all applicable laws, including NEPA, when considering any closure of an aircraft landing strip.

2.6.5 Health and Safety

Table 2-23. Health and Safety

Desired Outcomes (Goals and Objectives)
• Strive to ensure that human health and safety concerns on public lands remain a major priority. • Mitigate or eliminate all hazardous or potentially hazardous sites and situations, including hazardous materials, hazardous or solid wastes, abandoned mine sites, abandoned well sites, and other potential hazards on public lands. • Minimize or eliminate the potential for intentional or accidental releases of hazardous materials or wastes and solid wastes onto public lands.
Issue: Management of Abandoned Mine Lands
Management Actions
Common to the Proposed RMP and Draft RMP Alternatives
In conformance with BLM's long-term strategies and National Policies regarding Abandoned Mine Lands (AML), work with state agencies toward identifying and addressing physical safety and environmental hazards at all AML sites on public lands. To accomplish this long-term goal, establish the following criteria to assist in determining priorities for site and area mitigation and reclamation. Use the following criteria to establish physical safety hazard program priorities: • The highest priority of the AML physical safety program would be cleaning up those AML sites where (a) a death or injury has occurred, (b) the site is situated on or in immediate proximity to developed recreation sites and areas with high visitor use, and (c) upon formal risk assessment, a high or extremely high risk level is indicated. • AML would be factored into future recreation management area designations, land use planning assessments, and all applicable use authorizations. • Sites listed or eligible for listing would be entered in the Abandoned Mine Site Cleanup Module of Protection and Response Information System. • AML hazards should be, to the extent practicable, mitigated or remediated on the ground during site development. The criteria that would be used to establish water-quality based AML program priorities are: • Watersheds identified by the state as a priority based on (a) one or more water laws or regulations; (b) a threat to public health or safety; and (c) a threat to the environment • Projects reflecting a collaborative effort with other land managing agencies • Sites listed or eligible for listing in the Abandoned Mine Site Cleanup Module of the Protection and Response Information System • Projects that would be funded by contributions from collaborating agencies. The State Multi-Year Work Plan would be maintained and updated as needed to reflect current policies for identifying program physical safety and water quality AML sites priorities for reclamation or remediation.

Issue: Management of Hazardous Materials
Management Actions
Common to the Proposed RMP and Draft RMP Alternatives
• Identify and clean up unauthorized dumping sites and hazardous materials spills in the RFO as required to comply with applicable state, local, and federal laws and regulations. • Clean up and restore areas known to have hazardous materials, hazardous wastes, or solid wastes. Areas that have been cleaned up and restored would be maintained and monitored. • Actively seek responsible parties to reimburse hazardous materials cleanup costs.

2.7 IMPACTS SUMMARY TABLE

Table 2-24 provides a summary of impacts that would occur from implementing the five alternatives described in this chapter. Chapter 4 provides more detailed impact analysis.

Table 2-24. Summary Comparison of Impacts

Resource	Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Air Quality	None of the proposed decisions in Chapter 2 would have a major impact on air quality. Rather, it is more likely that impacts to air quality within the planning area would result from activities on private lands, including growth of cities and towns, increased vehicle traffic on highways and roads, and industrial development (e.g., coal-fired power plants). The public land activity likely to have the greatest impact on air quality would be wildland fire and fuels management, which varies by alternative as shown below.				
	Alternative N's minimal wildland fire use, prescribed fire, and non-fire fuel treatments would minimize smoke and other emissions in the short term but would result in increased fuel build-up, more frequent and larger wildland fires, and greater emissions in the long term.	The types of impacts experienced under these alternatives would be similar to those described for Alternative N except that under Alternatives A and the Proposed RMP. Treatments would average 73,600 acres annually with a maximum acreage limit set over the life of the plan (up to 1,472,000 acres). In contrast with Alternative N, Alternatives A and the Proposed RMP would potentially decrease the level of suppression being used on wildfires through AMR, a strategy to meet Fire Management Unit (FMU) objectives. In the short term, more acres could burn and smoke and particulate emissions could increase. In the long term, the potential for severe and uncontrollable types of wildfires would be predicted to decrease, enabling BLM to manage wildfire and associated emissions more effectively. In the short term, smoke management is a critical component of wildland fire use planning, and it is considered in developing the management response for each wildland fire use event.		The types of impacts experienced under these alternatives would be similar to those described for Alternative A and the Proposed RMP except that under Alternatives C and D, the average annual treatment acres (26,000) and maximum acreage over the life of the plan (520,000) would be less. Similar to Alternative A and the Proposed RMP, Alternatives C and D would potentially decrease the level of suppression being used on wildfires through adoption of AMR (including smoke management considerations). In the short term, relying on prescribed fire as the main fuels management tool would likely increase the acres burned by wildfires and accompanying smoke and particulate emissions compared with Alternative A and the Proposed RMP. In the long term, the potential for severe and uncontrollable types of wildfires may decrease but not as much as under Alternative A and the Proposed RMP because of the limitations on fuels treatments. The consequent impacts to air quality could be greater than under Alternative A and the Proposed RMP but less than under Alternative N.	
Soil Resources	The potential for impacts to soils under Alternative N would be greatest among all the alternatives, due to:	The potential for impacts to soils under Alternative A would be less than under Alternative N but greater than under Alternatives C or D or	The potential for impacts to soils under the Proposed RMP would be less than under Alternatives N or A but greater than under	The potential for impacts to soils under Alternative C would be less than under Alternatives N and A and the Proposed RMP but greater than	The potential for impacts to soils would be least under Alternative D because of limitations on surface disturbing activities resulting from:

Resource	Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Soil Resources	• Allowing cross-country OHV use on 77 percent of the RFO • Allowing oil and gas leasing on 78 percent of the RFO • Designating 75 percent of the RFO as VRM Classes III or IV.	the Proposed RMP because of the potential for surface disturbing activities resulting from: • Allowing cross-country OHV use on 21 percent of the RFO • Allowing oil and gas leasing on 79 percent of the RFO • Designating 79 percent of the RFO as VRM Classes III or IV • Recommending no ACECs or suitable WSRs.	Alternatives C and D because of limitations on surface disturbing activities resulting from: • Allowing cross-country OHV use on less than 1 percent of the RFO • Closing to leasing or allowing NSO on 28 percent of the RFO • Designating 33 percent of the RFO as VRM Classes I or II • Recommending one eligible WSR segment as suitable.	under Alternative D because of limitations on surface disturbing activities resulting from: • Allowing no cross-country OHV use • Closing to oil and gas leasing or allowing NSO on 35 percent of the RFO • Designating 32 percent of the RFO as VRM Classes I or II • In addition to existing withdrawals, recommending withdrawal of 8 percent of the RFO from mineral entry • Designating all potential ACECs • Recommending all eligible WSR segments as suitable.	• Allowing no cross-country OHV use • Closing to oil and gas leasing or allowing NSO on 57 percent of the RFO • Designating 56 percent of the RFO as VRM Classes I or II • In addition to existing withdrawals, recommending withdrawal of 35 percent of the RFO from mineral entry • Designating all potential ACECs • Recommending all eligible WSR segments as suitable. • Protecting all non-WSA lands with wilderness characteristics.
Water Resources	Surface disturbing activities would be restricted within 500 feet of all waters, limiting damage to riparian vegetation and sedimentation into streams.	Surface disturbing activities would be restricted within the 100-year floodplain or 330 feet on either side from the centerline, whichever is greater, of all waters, which would protect water sources, although less than under Alternatives N, C, or D.		Surface disturbing activities would be restricted within 660 feet of all waters, which would protect water sources more than under Alternatives N and A and the Proposed RMP.	

Resource	Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
	Allowing cross-country OHV use on 77 percent of the RFO and designating 4,315 miles of routes with 539 stream crossings would result in the greatest potential for impacts to water resources.	Allowing cross-country use on 21 percent of the RFO and designating 4,312 miles of routes with 443 stream crossings would have less potential for impacts to water resources than Alternative N, but greater than under the Proposed RMP and Alternatives C and D.	Allowing cross-country OHV use on less than 1 percent of the RFO would reduce potential impacts compared with Alternatives A and the Proposed RMP, and would be similar to impacts under Alternatives C and D. There would be 4,277 miles of designated routes with 400 stream crossings, which would have greater potential for impacts to water resources than under Alternatives C and D.	No cross-country OHV use would be allowed, which would be similar to the Proposed RMP and Alternative D. The potential for impacts to water resources under Alternative C would be less than under Alternatives N and A and the Proposed RMP but greater than under Alternative D because of the designation of 3,192 miles of routes with 273 stream crossings.	As in Alternative C, no cross-country OHV use would be allowed. The potential for impacts to water resources would be least under Alternative D because of the designation of only 3,043 miles of routes with 266 stream crossings.
Vegetation	Managing fire using a full suite of tools would allow for the graduated movement to a more ecologically sustainable condition and reduction of hazardous fuels. Continuing minimal treatments on a case-by-case basis could continue the existing trend of pinyon-juniper woodland encroachment and increase the risk of large or intense wildfires. Vegetation across a large portion of the RFO (77 percent) would continue to be subject to potential impacts from cross-country OHV use.	Adopting an appropriate management response strategy to wildfire would reduce pinyon-juniper woodland encroachment and decrease the risk of large or intense wildfires and their effects on vegetation. Vegetation on 21 percent of the RFO would continue to be subject to potential impacts from cross-country OHV use, less than under Alternative N but more than under the Proposed RMP and Alternatives C and D. Options for managing vegetation would be greatest under Alternative A because it would provide the most tools for managing	Adopting an appropriate management response strategy to wildfire would reduce pinyon-juniper woodland encroachment and decrease the risk of large or intense wildfires (same as under Alternative A). Managing less than 1 percent of the RFO as open for cross-country OHV use could result in the removal of existing vegetation and soil compaction, but on dramatically fewer acres than under Alternatives N and A. Tools for managing vegetation are the same as under Alternative A, but visual resource management and other restrictions	Adopting an appropriate management response strategy to wildfire would reduce pinyon-juniper woodland encroachment and decrease the risk of large or intense wildfires (same as under the Propose RMP and Alternatives A and D). There would be no areas open for cross-country OHV use, eliminating these impacts to vegetation. Alternative C would protect existing vegetation from disturbance because of its restrictions on VRM, OHVs, and vegetation management tools. However, it would provide less flexibility for vegetation management	Adopting an appropriate management response strategy to wildfire would reduce pinyon-juniper woodland encroachment and decrease the risk of large or intense wildfires (same as under Alternative A and C and the Proposed RMP). There would be no areas open for cross-country OHV use, eliminating these impacts to vegetation. Alternative D would best protect existing vegetation from disturbance because of its restrictions on VRM, OHVs, and vegetation management tools. However, it would provide the least flexibility for vegetation

Resource	Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
		vegetation and the fewest restrictions.	would reduce opportunities for vegetation management in some areas.	than under Alternative N and A and the Proposed RMP because some of these same restrictions could limit the effective management of pinyon-juniper woodland and sagebrush-steppe vegetation communities.	management among the alternatives because some of these same restrictions could limit the effective management of pinyon-juniper woodland and sagebrush-steppe vegetation communities.
Vegetation—Riparian	Surface disturbing activities are the primary cause of adverse impacts to riparian resources. Conversely, proposed decisions to limit surface disturbing activities would help protect riparian resources. Significant impacts to riparian resources would not be anticipated under any of the alternatives. Under all alternatives, actions in riparian areas would be guided by the Utah Riparian Management Policy and the decisions made through this planning effort.				
	Management of riparian and wetland areas would include the avoidance of surface disturbing activities within 500 feet of riparian areas. This would benefit riparian vegetation.	Impacts would be similar to those under Alternative N except that the size of the buffer zone in which no surface disturbance would be allowed is within the 100-year floodplain or 330 feet on either side from the centerline, whichever is greater. Thus, Alternative A and the Proposed RMP would protect a smaller area around the riparian/wetland zones from surface disturbance than under Alternative N. However, projects to improve habitat conditions within these riparian zones could still be performed, even within the buffer zone.		The types of impacts experienced as a result of riparian management would be similar to those described for Alternative N except that the size of the buffer zone in which no surface disturbance would be allowed would be 660 feet on each side of the riparian area. Thus, these alternatives would protect a larger area around the riparian/wetland zones from surface disturbing activities than under Alternatives N or A, or the Proposed RMP.	
	The potential for impacts to riparian resources under Alternative N would be greatest among all the alternatives, due to: • Allowing cross-country OHV use on 77 percent of the RFO • Allowing 539 stream crossings from OHV routes.	The potential for impacts to riparian resources under Alternative A would be less than under Alternative N but greater than the Proposed RMP or Alternatives C or D because of the potential for surface disturbing activities resulting from: • Allowing cross-country OHV use on 21 percent of the RFO • Allowing 443 stream crossings	The potential for impacts to riparian resources under the Proposed RMP would be less than under Alternatives N or A, but greater than under Alternatives C and D because of limitations on surface disturbing activities resulting from: • Allowing cross-country OHV use on less than 1 percent of the RFO • Allowing 400 stream crossings	The potential for impacts to riparian resources under Alternative C would be less than under Alternatives N and A and the Proposed RMP but greater than under Alternative D because of limitations on surface disturbing activities resulting from: • Allowing no cross-country OHV use • Allowing 273 stream crossings	The potential for impacts to riparian resources would be least under Alternative D because of limitations on surface disturbing activities resulting from: • Allowing no cross-country OHV use • Allowing 266 stream crossings from OHV routes • Closing to oil and gas leasing or allowing NSO on

Resource	Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
		from OHV routes • Recommending no ACECs or suitable WSRs.	from OHV routes • Closing to leasing or allowing NSO on 28 percent of the RFO • Designating 33 percent of the RFO as VRM Classes I or II. • Recommending one eligible WSR as suitable • Designating two ACECs (2,530 acres).	from OHV routes • Closing to oil and gas leasing or allowing NSO on 35 percent of the RFO • Designating 32 percent of the RFO as VRM Classes I or II • In addition to existing withdrawals, recommending withdrawal of 8 percent of the RFO from mineral entry • Designating all potential ACECs • Recommending all eligible WSRs as suitable.	56 percent of the RFO • Designating 56 percent of the RFO as VRM Classes I or II • In addition to existing withdrawals, recommending withdrawal of 35 percent of the RFO from mineral entry • Designating all potential ACECs • Recommending all eligible WSRs as suitable • Protecting all non-WSA lands with wilderness characteristics.
Vegetation—Invasive, Non-Native Species	Alternatives N, A, and the Proposed RMP would allow a full range of weed control methods (mechanical, biological, manual, fire, and chemical) to be used and would afford the best opportunity for controlling weeds.			Alternatives C and D would preclude the use of mechanical, manual, and chemical methods. Control of some noxious weeds under these alternatives would not be possible in some areas because of lack of suitable substitute treatments, potentially allowing the weeds to spread.	
	Weed seeds are often transported from one place to another on the tires and undercarriages of vehicles. Allowing motorized access into more areas and on more routes would increase the potential for expanding noxious weeds infestations; limiting access decreases the potential.				
	The potential for the spread of weeds by vehicles would be greatest under Alternative N because cross-country OHV use would continue to be	The potential for the spread of weeds by vehicles under Alternative A would be less than under Alternative N but greater than under the Proposed	The potential for the spread of weeds by vehicles under the Proposed RMP would be less than under Alternatives N and A but greater than Alternatives	The potential for the spread of weeds by vehicles under Alternative C would be less than under Alternatives N and A and the Proposed RMP but	The potential for the spread of weeds by vehicles under Alternative D would be least among all alternatives because no cross-country OHV use

Resource	Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
	allowed on 77 percent of the RFO and 10 percent would be closed to OHV use.	RMP or Alternatives C or D because cross-country OHV use would be allowed on 21 percent of the RFO and no areas would be closed to OHV use.	C or D because cross-country OHV use would be allowed on less than 1 percent of the RFO and 10 percent would be closed to OHV use.	greater than Alternative D because no cross-country OHV use would be allowed and 32 percent of the RFO would be closed to OHV use.	would be allowed and 54 percent of the RFO would be closed to OHV use.
Cultural Resources	All permitted activities regulated by BLM are subject to the legal and policy protections and mitigation afforded cultural resources. Unregulated uses that could affect cultural resources include dispersed recreation, and OHV use in areas designated as open. Special designations such as WSAs, ACECs, and WSRs, and decisions to protect, preserve, and maintain the wilderness characteristics associated with non-WSA lands with wilderness characteristics (Proposed RMP and Alternative D) would have a largely beneficial impact on cultural resources because the management prescriptions associated with those designations limit surface disturbing activities.				
	The potential for inadvertent impacts to cultural resources under Alternative N would be greatest among all the alternatives, due to: • Allowing cross-country OHV use on 77 percent of the RFO • Allowing oil and gas leasing on 78 percent of the RFO • Designating 75 percent of the RFO as VRM Classes III or IV.	The potential for inadvertent impacts to cultural resources under Alternative A would be less than under Alternative N but greater than the Proposed RMP or Alternatives C or D because of the potential for surface disturbing activities resulting from: • Allowing cross-country OHV use on 21 percent of the RFO • Allowing oil and gas leasing on 79 percent of the RFO • Designating 79 percent of the RFO as VRM Classes III or IV • Recommending no ACECs or suitable WSRs.	The potential for inadvertent impacts to cultural resources under the Proposed RMP would be less than under Alternatives N or A but greater than Alternatives C and D because of limitations on surface disturbing activities resulting from: • Allowing cross-country OHV use on less than 1 percent of the RFO • Closing to leasing or allowing NSO on 28 percent of the RFO • Designating 33 percent of the RFO as VRM Classes I or II • Recommending one eligible WSR as suitable.	The potential for inadvertent impacts to cultural resources under Alternative C would be less than under Alternatives N and A and the Proposed RMP but greater than under Alternative D because of limitations on surface disturbing activities resulting from: • Allowing no cross-country OHV use • Closing to leasing or allowing NSO on 35 percent of the RFO • Designating 32 percent of the RFO as VRM Classes I or II • In addition to existing withdrawals, recommending	The potential for inadvertent impacts to cultural resources would be least under Alternative D because of limitations on surface disturbing activities resulting from: • Allowing no cross-country OHV use • Closing to leasing or allowing NSO on 57 percent of the RFO • Designating 56 percent of the RFO as VRM Classes I or II • In addition to existing withdrawals, recommending withdrawal of 35 percent of the RFO from mineral entry • Designating all

Resource	Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
				withdrawal of 8 percent of the RFO from mineral entry • Designating all potential ACECs • Recommending all eligible WSRs as suitable.	potential ACECs • Recommending all eligible WSRs as suitable • Protecting, preserving, and maintaining all non-WSA with wilderness characteristics.
Paleontological Resources	All permitted activities regulated by BLM are subject to the legal and policy protections and mitigation afforded paleontological resources. Impacts on paleontological resources occur from natural weathering and erosion, surface disturbing activities, excavation, and theft or vandalism. Unregulated uses that could affect paleontological resources include dispersed recreation, and OHV use in areas designated as open. Special designations, such as WSAs, ACECs, and WSRs, and decisions to protect, preserve, and maintain wilderness characteristics associated with non-WSA lands with wilderness characteristics (Proposed RMP and Alternative D) would have a largely beneficial impact on paleontological resources because the management prescriptions associated with them would limit surface disturbing activities.				
	The potential for inadvertent impacts to paleontological resources under Alternative N would be greatest among all the alternatives, due to: • Allowing cross-country OHV use on 77 percent of the RFO • Allowing oil and gas leasing on 78 percent of the RFO • Designating 75 percent of the RFO as VRM Classes III or IV.	The potential for inadvertent impacts to paleontological resources under Alternative A would be less than under Alternative N but greater than under the Proposed RMP or Alternatives C or D because of the potential for surface disturbing activities resulting from: • Allowing cross-country OHV use on 21 percent of the RFO • Allowing oil and gas leasing on 79 percent of the RFO • Designating 79 percent of the RFO	The potential for inadvertent impacts to paleontological resources under the Proposed RMP would be less than under Alternatives N or A but greater than under Alternatives C and D because of limitations on surface disturbing activities resulting from: • Allowing cross-country OHV use on less than 1 percent of the RFO • Closing to leasing or allowing NSO on 28 percent of the RFO • Designating 33 percent of the RFO	The potential for inadvertent impacts to paleontological resources under Alternative C would be less than under Alternatives N and A and the Proposed RMP but greater than under Alternative D because of limitations on surface disturbing activities resulting from: • Allowing no cross-country OHV use • Closing to leasing or allowing NSO on 35 percent of the RFO • Designating 32 percent of the RFO as VRM Classes I	The potential for inadvertent impacts to paleontological resources would be least under Alternative D because of limitations on surface disturbing activities resulting from: • Allowing no cross-country OHV use • Closing to leasing or allowing NSO on 57 percent of the RFO • Designating 56 percent of the RFO as VRM Classes I or II • In addition to existing withdrawals,

Resource	Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
		as VRM Classes III or IV • Recommending no ACECs or suitable WSRs.	as VRM Classes I or II • Recommending one eligible WSR as suitable.	or II • In addition to existing withdrawals, recommending withdrawal of 8 percent of the RFO from mineral entry • Designating all potential ACECs • Recommending all eligible WSRs as suitable.	recommending withdrawal of 35 percent of the RFO from mineral entry • Designating all potential ACECs • Recommending all eligible WSRs as suitable • Protecting, preserving, and maintaining all non-WSA lands with wilderness characteristics.
Visual Resources	Under Alternative N, 25 percent of the RFO would be designated VRM Classes I or II. This would provide more protection for scenic resources than under Alternative A and less than under the Proposed RMP and Alternatives C and D.	Under Alternative A, 21 percent of the RFO would be designated VRM Classes I or II, providing the least protection for scenic resources among the alternatives.	Under the Proposed RMP, 33 percent of the RFO would be designated VRM Classes I or II. This would provide more protection for scenic resources than under Alternatives N or A and less than under Alternatives C and D.	Under Alternative C, 32 percent of the RFO would be designated VRM Classes I or II. This would provide more protection for scenic resources than under Alternatives N or A or the Proposed RMP and less than under Alternative D.	Under Alternative C, 56 percent of the RFO would be designated VRM Classes I or II, providing the greatest protection for scenic resources among the alternatives.
	Under Alternative N, 77 percent of the RFO would be open to cross-country OHV use, including 206,000 acres in VRM Class II areas. The potential for impacts to scenic resources from OHV use would be greatest under Alternative N.	Under Alternative A, 21 percent of the RFO would be open to cross-country OHV use. The potential for impacts to scenic resources from OHV use would be less than under Alternative N, but greater than under the Proposed RMP and Alternatives C and D.	Under the Proposed RMP, less than 1 percent of the RFO would be open to cross-country OHV use, reducing the potential for impacts substantially compared with Alternatives N and A.	No cross-country OHV use would be allowed, eliminating the potential for impacts to scenic resources from OHV use. Alternatives C and D would provide the greatest protection for scenic resources.	
Special Status Species	The implementation of decisions that would have the greatest potential adverse effects on SSS would be actions that allow surface disturbing activities. The implementation of decisions that would have the greatest potential beneficial effects to SSS would be actions				

Resource	Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
	that would directly protect SSS and their habitat or indirectly protect SSS through surface restrictions. These actions would include: • SSS management • Protecting, preserving, and maintaining non-WSA lands with wilderness characteristics • Special Designations (ACECs, WSRs, WSAs) • Visual Resource Management Class I or II designations.				
	The potential for impacts to SSS under Alternative N would be greatest among all the alternatives, due to: • Allowing cross-country OHV use on 77 percent of the RFO • Maintaining minimal restrictions on other surface disturbing activities.	The potential for impacts to SSS under Alternative A would be less than under Alternative N but greater than under the Proposed RMP or Alternatives C or D because of the potential for surface disturbing activities resulting from: • Allowing cross-country OHV use on 21 percent of the RFO • Maintaining minimal restrictions on other surface disturbing activities • Recommending no ACECs or suitable wild and scenic rivers.	The potential for impacts to SSS under the Proposed RMP would be less than under Alternatives N or A, but greater than under Alternatives C and D because of limitations on surface disturbing activities resulting from: • Allowing cross-country OHV use on less than 1 percent of the RFO • Closing to leasing or allowing NSO on 28 percent of the RFO • Designating 33 percent of the RFO as VRM Classes I or II • Recommending one eligible WSR as suitable • Designating two ACECs (2,530 acres).	The potential for impacts to SSS under Alternative C would be less than under Alternatives N and A and the Proposed RMP but greater than under Alternative D because of limitations on surface disturbing activities resulting from: • Allowing no cross-country OHV use • Closing to oil and gas leasing or allowing NSO on 35 percent of the RFO • Designating 32 percent of the RFO as VRM Classes I or II • In addition to existing withdrawals, recommending withdrawal of 8 percent of the RFO from mineral entry • Designating all potential ACECs • Recommending all eligible WSRs as	The potential for impacts to SSS would be least under Alternative D because of limitations on surface disturbing activities resulting from: • Allowing no cross-country OHV use • Closing to oil and gas leasing or allowing NSO on 57 percent of the RFO • Designating 56 percent of the RFO as VRM Classes I or II • In addition to existing withdrawals, recommending withdrawal of 35 percent of the RFO from mineral entry • Designating all potential ACECs • Recommending all eligible WSRs as suitable • Protecting, preserving, and

Resource	Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
				suitable.	maintaining all non-WSA lands with wilderness characteristics.
Fish and Wildlife	Under Alternative N, managing fire using a full suite of tools would allow for the graduated movement to a more ecologically sustainable condition and reduction of hazardous fuels. However, continuing minimal treatments on a case-by-case basis could contribute to fuel loading, setting the stage for catastrophic fires, and consequent loss of wildlife habitat. Current forage allocations would continue, providing no additional benefits to wildlife. Seventy-seven percent of the lands managed by the RFO would remain open to cross-country OHV use, leaving wildlife vulnerable to displacement and harassment and habitat susceptible to degradation.	Under Alternative A, implementing an appropriate management response strategy would allow the use of wildland fire as a vegetation management tool, benefiting wildlife species and habitat. A full range of tools would be available for fuels management and other vegetation treatments, allowing the greatest flexibility to enhance wildlife habitats. Current forage allocations would continue, providing no additional benefits to wildlife. Twenty-one percent of the lands managed by the RFO would remain open to cross-country OHV use, reducing the potential for wildlife displacement and harassment, and habitat degradation compared with Alternative N.	Under the Proposed RMP, implementing an appropriate management response strategy would allow the use of wildland fire as a vegetation management tool, benefiting wildlife species and habitat (same as Alternative A). A full range of tools would be available for fuels management and other vegetation treatments, allowing the greatest flexibility to enhance wildlife habitats (same as Alternative A). Less than 1 percent of the lands managed by the RFO would remain open to cross-country OHV use, greatly reducing the potential for wildlife displacement and harassment, and habitat degradation compared with Alternatives N and A.	Under Alternatives C and D, implementing an appropriate management response strategy would allow the use of wildland fire as a vegetation management tool, benefiting wildlife species and habitat (same as Alternatives A and the Proposed RMP). Only prescribed fire and other natural means would be used to manage fuel and other vegetation, limiting options for treatment that in some cases might not be effective, reducing the benefit to wildlife compared with Alternatives A and the Proposed RMP. None of the lands managed by the RFO would remain open to cross-country OHV use, eliminating the possibility of displacement, harassment, and habitat degradation. Establishing the Henry Mountains ACEC for bison and mule deer values would recognize the relevance and importance of these resources and provide special management emphasis to enhance them.	
	Alternatives N and A, with their accommodation for oil and gas development and cross-country OHV use, would have the greatest adverse impacts on fish, wildlife, and their habitats.		The Proposed RMP would balance the impacts of development with the need to protect fish, wildlife, and their habitats.	Alternatives C and D, with their special designations and emphasis on conservation, would be most beneficial to fish, wildlife, and their habitats.	
Wild Horses and	The preliminary AML for the wild burros would		Establishing a formal	The wild burro AML would be the largest of the	

Resource	Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Burros	maintain a viable population. Forage allocations are sufficient for the wild burros in the northern portions of the HMA; however, there could be competition for forage resources in the southern portions. The potential for displacement of wild burros from OHV use exists.		wild burro AML would maintain the viability of the population and result in the long-term maintenance of wild burro habitat components. The Proposed RMP could eliminate habitat competition between livestock and wild burros, but displacement from OHV use would continue. None of the impacts are anticipated to be significant.	alternatives, which could increase competition for habitat resources with wildlife and livestock.	
Fire and Fuels Management	• Maintaining State of Utah air quality standards could result in fewer acres burned using prescribed fires or wildland fire use because NAAQS could be exceeded. If the air quality of Class I airsheds were adversely affected, wildland fire use and prescribed fires could be suspended. Consideration of regional haze could increase the restrictions on wildland fire use or prescribed fire. • Managing WSAs under the IMP precludes the use of mechanical (chaining, harrowing) and manual (chainsaw) fuels reduction treatments. This could limit the ability to maintain or restore properly functioning vegetation and reduce hazardous fuels in WSAs, including those in the Dirty Devil, Horseshoe Canyon, and Henry Mountains areas.				
	• Allowing vegetation treatment using mechanical, wildland, and/or prescribed fire, and chemical treatments on a case-by-case basis would move vegetation toward a more ecologically sustainable condition over a multi-year period. • Proposed decisions for visual resource management could	• Allowing use of a full range of vegetation management tools, including mechanical, biological, manual, prescribed and wildland fire use, and chemical (herbicides) would complement the ability to maintain and restore properly functioning vegetation and reduce hazardous	• Allowing use of a full range of vegetation management tools, including mechanical, biological, manual, prescribed and wildland fire use, and chemical (herbicides) would complement the ability to maintain and restore properly functioning vegetation and reduce hazardous	• Restrictions on the use of non-fire treatments would limit the ability to maintain or restore properly functioning vegetation and reduce hazardous fuels in some areas. • Proposed decisions for visual resource management could preclude some types of treatments within the 21	• Restrictions on the use of non-fire treatments which would limit the ability to maintain or restore properly functioning vegetation and reduce hazardous fuels in some areas. • Proposed decisions for visual resource management could preclude some types of treatments within the 53

Resource	Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
	affect the design of non-fire treatment projects, particularly within the 25 percent of the RFO designated as VRM Class II.	fuels. • Proposed decisions for visual resource management could preclude some types of treatments within the 21 percent of the RFO designated as VRM Class I, less than under Alternative N.	fuels. • Proposed decisions for visual resource management could preclude some types of treatments within the 21 percent of the RFO designated as VRM Class I and affect the design of non-fire fuels treatment projects, particularly in VRM Class II areas (12 percent) in the Henry Mountains and near the towns of Torrey, Grover, and Teasdale. Treatment acres and success may be reduced compared with Alternative N and A, but would be greater than under Alternative C and D.	percent of the RFO designated as VRM Class I and affect the design of non-fire fuels treatment projects, particularly in VRM Class II areas (11 percent) in the Henry Mountains and near the towns of Torrey, Grover, and Teasdale. Treatment acres and success would be reduced compared with Alternatives N and A and the Proposed RMP, but would be greater than under Alternative D. • Proposed management direction for suppressing wildfires in the Fremont Gorge/ Cockscomb, Henry Mountains, Kingston Canyon, Parker Mountain, and Sevier Canyon ACECs could limit the ability to maintain or restore properly functioning vegetation and reduce hazardous	percent of the RFO designated as VRM Class I and affect the design of non-fire fuels treatment projects, particularly in VRM Class II areas (3 percent) in the Henry Mountains and near the towns of Torrey, Grover, and Teasdale. Alternative D would restrict treatment projects on the greatest amount of acres. • Proposed management direction for suppressing wildfires in the Fremont Gorge/ Cockscomb, Henry Mountains, Kingston Canyon, Parker Mountain, and Sevier Canyon ACECs could limit the ability to maintain or restore properly functioning vegetation and reduce hazardous fuels. • Protecting, preserving, and maintaining the non-WSA lands

Resource	Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
				fuels.	with wilderness characteristics would preclude the use of mechanical (chaining, harrowing) and manual (chainsaw) fuels reduction treatments on these lands. This could limit the ability to maintain or restore properly functioning vegetation and reduce hazardous fuels in some areas, such as parts of the Henry Mountains.
Non-WSA Lands with Wilderness Characteristics	Impacts to non-WSA lands with wilderness characteristics would be the greatest among the alternatives: • Nine-six percent of these lands would be open to cross-country OHV use. • Eight-five percent of these lands would be open to oil and gas leasing with standard stipulations. • Thirteen percent of these lands would be open to oil and gas leasing with moderate	Impacts to non-WSA lands with wilderness characteristics would be less than Alternative N and greater than the Proposed RMP and Alternatives C and D: • Thirty-two percent of these lands would be open to cross-country OHV use. • Forty-eight percent of these lands would be open to oil and gas leasing with standard stipulations. • Fifty-two percent of these lands would	Impacts to the non-WSA lands with wilderness characteristics would be less than Alternatives N and A and greater than Alternatives C and D: • Less than 1 percent of these lands would be open to cross-country OHV use. • All of the non-WSA lands with wilderness characteristics would be open to oil and gas leasing subject to major constraints (NSO). • Two percent of	Impacts to non-WSA lands with wilderness characteristics would be less than Alternatives N and A and the Proposed RMP but greater than Alternative D: • None of these lands would be open to cross-country OHV use. • Thirty percent of these lands would be open to oil and gas leasing with standard stipulations. • Thirty-nine of these lands would be open to oil and gas	Impacts to non-WSA lands with wilderness characteristics would be the least among the alternatives: • None of these lands would be open to cross-country OHV use. • None of these lands would be open to oil and gas leasing. • All of these lands would be recommended for withdrawal from mineral entry. • All would be designated Class I

Resource	Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
	constraints. • One percent of these lands would be open to oil and gas leasing with major constraints (NSO).	be open to oil and gas leasing with moderate constraints.	these lands would be recommended for withdrawal from mineral entry.	leasing with moderate constraints. • One percent of these lands would be recommended for withdrawal from mineral entry.	VRM.
Forestry and Woodland Products	Alternative N would continue restrictions on timber harvesting and commercial woodland product sales included in current management plans. The potential production of forest and woodland resources would likely be less than under Alternatives A and the Proposed RMP but more than under Alternatives C and D.	Alternative A would allow timber sales, woodland products harvesting, and seed and live plant collecting on the most acres with the most tools and fewest restrictions among the alternatives. Alternative A would provide the greatest availability of forest and woodland products and the greatest opportunities to restore, maintain, and improve forest and woodland health.	The Proposed RMP would allow timber sales, woodland products harvesting, and seed and live plant collecting with the same tools as Alternative A but on slightly fewer acres because of the addition of one suitable WSR corridor that would be restricted and decisions to protect, preserve, and maintain the wilderness characteristics associated with non-WSA lands with wilderness characteristics. The potential production of forest and woodland products and potential forest and woodland health could be slightly less than under Alternative A but more than under Alternatives N, C or D.	Under Alternative C, commercial timber sales would be precluded, greatly diminishing the availability of timber products for commercial use. Woodland products harvesting and seed and live plant collecting would be the same as Alternatives A and the Proposed RMP but on fewer acres because of restrictions in all 12 suitable WSR corridors. The potential production of forest and woodland products and potential forest and woodland health would be less than under Alternatives A and the Proposed RMP, similar to that under Alternative N, but more than under Alternative D.	Under Alternative D, commercial timber sales would be precluded, and no commercial or non-commercial use of forest and woodland products or seed and live plants would be allowed within suitable WSR corridors and non-WSA lands with wilderness characteristics. Alternative D would result in the least production of forest and woodland products and could result in the greatest impacts to forest and woodland health.
Livestock Grazing	• Oil and gas development could reduce land available for livestock grazing under all alternatives by a maximum of 3,080 acres based on the Reasonably Foreseeable Development (RFD) Scenario for Oil and Gas, equating to a loss of 385 AUMs and possibly affecting the viability of some allotments. • Increasing recreational use could increase conflicts between recreationists and livestock.				

Resource	Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
	• Increasing OHV use could increase conflicts between OHVs and livestock in some areas.				
	Decisions likely to affect grazing opportunities include: • Continuing to allow cross-country OHV use on 77 percent of the RFO.	Decisions likely to affect grazing opportunities include: • Allowing cross-country OHV use on 21 percent of the RFO • Disposing of 13,400 acres of public land (Section 203 sales) that would reduce available and could affect the viability of some allotments.	Decisions likely to affect grazing opportunities include: • Disposing of 13,400 acres of public land (Section 203 sales) that would reduce available AUMs and could affect the viability of some allotments. • Under the Proposed RMP, 600 AUMs would be allocated to burros in the Canyonlands HMA, to meet an AML upper limit of 100.	Under Alternatives C and D, decisions likely to affect grazing opportunities include: • Fewer acres identified for vegetation treatment than Alternatives A and the Proposed RMP. • Limitations on the use of chemicals (pesticides and herbicides) for treating noxious weed and insect pest problems.	
Recreation	Alternative N would provide the greatest opportunities for motorized recreation uses and would cause the greatest adverse impacts to non-motorized uses. Seventy-seven percent of the RFO would continue to be open to cross-country OHV use, and 4,315 miles of routes would continue to be open to motor vehicles, the most under any of the alternatives. One SRMA (managed	Alternative A would provide fewer opportunities for motorized recreation than Alternative N, but more than the Proposed RMP and Alternatives C and D. Twenty-one percent of the RFO would be open to cross-country OHV use. The open areas include those currently used for cross-country travel, plus additional areas for growth. OHV use in 79 percent of the RFO would be limited to	The Proposed RMP would provide a balance of motorized and non-motorized recreation opportunities. It would provide fewer opportunities for motorized recreation than Alternatives N and A, but more than Alternatives C and D. Less than 1 percent of the RFO would be open to cross-country OHV use; however, the four open areas, Big Rocks, Factory Butte, Glenwood, and Aurora,	Alternative C would provide more opportunities for non-motorized recreation than under Alternatives N and A and the Proposed RMP and more opportunities for motorized recreation than under Alternative D. No areas would be open to cross-country OHV use. OHVs would be limited to designated routes on 68 percent of the RFO. Designated routes would total 3,192 miles, 73 percent of the	Alternative D would provide the greatest opportunities for non-motorized recreation, the fewest opportunities for motorized recreation uses, and have the greatest adverse impact on motorized users. No areas would be open to cross-country OHV use. OHVs would be limited to designated routes on 46 percent of the RFO. Designated routes would total 3,043 miles, 71 percent of the routes open under Alternative

Resource	Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
	by the Fillmore FO) would continue, but no new SRMAs would be established. There would be no VRM Class I areas, and 25 percent of the RFO would be managed as VRM Class II, which supports primitive and semi-primitive recreation opportunities. Seventy-five percent of the RFO would be managed as VRM Classes III and IV supporting all types of recreation, including motorized use. Conflicts between motorized and non-motorized users would continue, and adverse effects on primitive and semi-primitive recreation settings would continue to increase.	designated trails. Designated routes would total 4,312 miles, essentially the same as those open under Alternative N. No areas would be closed to OHVs. The Dirty Devil SRMA would provide opportunities for primitive and semi-primitive motorized and non-motorized recreation; the Factory Butte, Sahara Sands and Big Rocks SRMAs would provide opportunities for cross-country OHV use; and the Otter Creek SRMA would provide opportunities for dispersed camping. Twenty-one percent of the RFO would be designated as VRM Class I supporting primitive recreation. No lands would be designated as VRM Class II. Seventy-nine percent of the RFO would be designated as VRM Classes III and IV supporting all types of recreation, including motorized use. The decisions in Alternative A would help resolve conflicts between motorized and non-motorized users.	are the areas currently most used by riders. OHVs would be limited to designated trails on 90 percent of the RFO's land. Designated routes would total 4,277 miles. Ten percent of the lands managed by the RFO would be closed to OHVs. The Henry Mountains, Capitol Reef Gateway, and Dirty Devil SRMAs would provide opportunities for primitive and semi-primitive motorized and non-motorized recreation; the Factory Butte and Big Rocks SRMAs would provide opportunities for cross-country OHV use. Thirty-three percent of the RFO would be designated as VRM Classes I and II supporting primitive and semi-primitive recreation, 67 percent would be designated as VRM Classes III and IV supporting all types of recreation, including motorized use. The decisions in the Proposed RMP would help resolve conflicts between motorized and non-motorized users.	routes open under Alternative N. Thirty-two percent of the lands managed by the RFO would be closed to OHVs. The Henry Mountains, Capitol Reef Gateway, Dirty Devil, and Sevier Canyon SRMAs would provide opportunities for primitive, semi-primitive motorized and non-motorized, and roaded natural recreation. Thirty-two percent of the RFO would be designated as VRM Classes I and II supporting primitive and semi-primitive recreation; and 68 percent would be designated as VRM Classes III and IV, supporting all types of recreation, including motorized use. While Alternative C would reduce adverse effects on primitive and semi-primitive recreation settings, conflicts between motorized and non-motorized users could be exacerbated because of the limited opportunities for motorized use.	N. Fifty-four percent of the RFO would be closed to OHVs. Seven SRMAs would be established to provide opportunities for primitive, semi-primitive motorized and non-motorized recreation. Portions of two of these SRMAs would provide some areas with opportunities for dispersed recreation. Fifty-six percent of the RFO would be designated as VRM Classes I and II supporting primitive and semi-primitive recreation; 44 percent would be designated as VRM Classes III and IV supporting all types of recreation, including motorized use. While Alternative D would reduce adverse effects on primitive and semi-primitive recreation settings, conflicts between motorized and non-motorized users could be exacerbated because of the limited opportunities for motorized use.

Resource	Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Travel Management	Management decisions that involve changes to miles of roads open for public or administrative use, number of acres open to off-road travel, or specific travel restrictions (vehicle size, season restrictions, etc.) would affect access into and across the RFO.				
	Alternative N provides the greatest opportunity for unrestricted motorized use and access with 77 percent of the RFO designated as open to motorized use, and 13 percent limited to designated routes (4,315 miles). Access would be restricted within 10 percent of the RFO designated as closed for the protection of WSAs, ACECs and cultural resources.	Under Alternative A, open motorized use areas would be reduced to 21 percent, with the remainder of the RFO limited to designated routes (4,312 miles). Alternative A provides fewer acres for unrestricted motorized use than Alternative N, but more than under the Proposed RMP and Alternatives C and D. The miles of routes available would only be reduced by 3 miles from Alternative N. SRMA management within 49 percent of the open areas could enhance the open motorized experiences in those areas. No areas would be closed under Alternative A.	Under the Proposed RMP, open motorized use would be reduced significantly compared with Alternatives N and A, to less than 1 percent, which would affect motorized use and access. Limited acres would be 90 percent, the most under any alternative. Motorized use would be allowed on 4,277 miles of routes, which would be less than under Alternatives N and A, but more than under Alternatives C and D. SRMA management within 86 percent of the open areas could enhance the open motorized experiences in those areas. Access would be restricted within 10 percent of the RFO designated as closed for the protection of WSAs, WSR corridors, ACECs, and SRMAs. The potential for impacts from closed areas would be the same as under Alternative N, greater than under Alternative A, and less than under Alternatives C and D.	Under Alternative C, no open motorized use areas would be designated, eliminating cross-country travel. Access would be allowed in 68 percent of the RFO with use limited to designated routes (3,192 miles). The acres and miles of routes available for travel would be less than under Alternatives N and A and the Proposed RMP, but more than Alternative D. Access would be restricted within 32 percent of the RFO designated as closed for the protection of WSAs, WSR corridors, ACECs, and SRMAs. The potential for impacts from closed areas would be greater than under Alternatives N and A, but less than under Alternative D.	Under Alternative D, no open motorized use areas would be designated, eliminating cross-country travel. Access would be allowed in 46 percent of the RFO with use limited to designated routes (3,043 miles). The acres and miles of routes available for travel would be the least of any of the alternatives. Access would be restricted within 54 percent of the RFO designated as closed for the protection of WSAs, WSR corridors, non-WSA lands with wilderness characteristics, ACECs, and SRMAs. The potential for impacts from closed areas would be the greatest under Alternative D.
~~Lands and Realty~~	Under Alternative N, 280	One hundred and eighteen parcels totaling 13,400		No lands would be identified as available for sale	

Resource	Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
	acres would be identified as available for FLPMA Section 203 sales. Inholdings within the wilderness study areas and four existing ACECs would be priorities for acquisition.	acres would be available for sale under FLPMA Section 203. These sales would improve the manageability of the public land estate by disposing of parcels isolated and/or difficult to manage and could provide opportunities for community expansion. Conversely, grazing land, open space, wildlife habitat and land available for other public land uses would be lost. Inholdings within the WSAs (under Alternative A and the Proposed RMP), one suitable WSR corridor and two areas of critical environmental concern would be priorities for acquisition (the Proposed RMP only).		under FLPMA Section 203; hence there would be no beneficial or adverse impacts. Inholdings within the WSAs, 12 suitable WSR corridors, and 16 areas of critical environmental concern would be priorities for acquisition, the most among the alternatives.	
	The potential for impacts to ROWs under Alternative N would be greater than under Alternative A, but less than under the Proposed RMP and Alternatives C, and D, because of management of avoidance/exclusion areas for: • WSAs • ACECs • Eligible WSR corridors • Areas closed to oil and gas leasing • Areas open to oil and gas leasing with NSO stipulations.	The potential for impacts to ROWs because of management of avoidance/exclusion areas would be the least under Alternative A and would include: • WSAs • Areas closed to oil and gas leasing.	The potential for impacts to ROWS under the Proposed RMP would be greater than under Alternatives N and A, but less than under Alternatives C and D, because of management of avoidance/exclusion areas for: • WSAs • ACECs • Suitable WSR corridor • Non-WSA lands with wilderness characteristics • Areas closed to oil and gas leasing • Areas open to oil and gas leasing with NSO stipulations.	The potential for impacts to ROWs under Alternative C would be greater than under Alternatives N, A, and the Proposed RMP, but less than under Alternative D, because of management of avoidance/exclusion areas for: • WSAs • ACECs • Suitable WSR corridors • Areas closed to oil and gas leasing • Areas open to oil and gas leasing with NSO stipulations.	The potential for impacts to ROWS because of management of avoidance/exclusion areas would be the greatest under Alternative D and would include: • WSAs • ACECs • Suitable WSR corridors • Non-WSA lands with wilderness characteristics • Areas closed to oil and gas leasing • Areas open to oil and gas leasing with NSO stipulations.
Leasable Minerals	Seventy-eight percent of the RFO would be open to oil and gas leasing,	Seventy-nine percent of the RFO would be open to oil and gas leasing,	Seventy-nine percent of the RFO would be open to oil and gas leasing	Seventy-two percent of the RFO would be open to oil and gas leasing,	Forty-five percent of the RFO would be open to oil and gas leasing,

Resource	Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
	providing slightly less opportunity than under Alternatives A and the Proposed RMP and more opportunity than under Alternatives C or D.	providing the greatest opportunity for oil and gas exploration and development among the alternatives.	(similar to Alternative A). However, more acres would be under CSU and timing stipulations. Fewer acres would be open under standard stipulations.	providing less opportunity than under Alternatives N and A and the Proposed RMP and more opportunity than under Alternative D.	providing the least opportunity for oil and gas leasing among the alternatives.
Locatable Minerals	Under all alternatives, 154,700 acres (7 percent of the RFO) currently withdrawn from mineral entry would remain withdrawn, precluding opportunities for mining on those lands.				
	Under Alternative N, 14,780 acres are proposed for withdrawal from mineral entry. Mining opportunity would be less than under Alternative A but greater than under the Proposed RMP and Alternatives C or D.	Under Alternative A, no additional lands are proposed for withdrawal from mineral entry, providing the greatest opportunity for mining.	Under the Proposed RMP, 21,500 acres are proposed for withdrawal from mineral entry. Mining opportunity would be less than under Alternatives N or A but greater than under Alternatives C or D.	Under Alternative C, 176,400 acres are proposed for withdrawal from mineral entry. Mining opportunity would be less than Alternatives N and A or the Proposed RMP but greater than under Alternative D.	Under Alternative D, 749,200 acres are proposed for withdrawal from mineral entry. Mining opportunity would be the least among the alternatives.
Salable Minerals	Seventy-eight percent of the RFO would be open to mineral material disposal, providing slightly less opportunity than under Alternatives A and the Proposed RMP and more opportunity than under Alternatives C or D.	Seventy-nine percent of the RFO would be open to mineral material disposal, providing the greatest opportunity for the disposal of mineral materials among the alternatives.	Seventy-nine percent of the RFO would be open to mineral material disposal, which is virtually identical to that proposed under Alternative A.	Seventy-two percent of the RFO would be open to mineral material disposal, providing less opportunity than under Alternatives N and A and the Proposed RMP and more opportunity than under Alternative D.	Forty-five percent of the RFO would be open to mineral material disposal, providing the least opportunity for disposal of mineral materials among the alternatives.
Wilderness Study Areas	Under all alternatives, WSA management is guided primarily by BLM Handbook H-8550-1, *Interim Management Policy for Lands under Wilderness Review*. The IMP directs that WSAs are managed not to impair their suitability for preservation as wilderness. Additionally, BLM policy requires that WSAs be closed to oil and gas leasing and designated as VRM Class I. Collectively, this management direction protects the wilderness characteristics of the WSAs.				
	Within 10 of the 11 WSAs, 41.5 miles of inventoried ways would continue to be designated for use by motor vehicles, which would temporarily affect	All WSAs would be designated as limited to OHV use, and 51.6 miles of ways would be designated as open to motorized vehicles, the most of any alternative.	Area designations under the Proposed RMP would be the same as Alternative N. An additional 2.5 miles of ways would be designated as open to	All WSAs would be closed to motorized use, which would preclude impacts to wilderness characteristics from motorized vehicles.	

Resource	Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
	solitude and opportunities for primitive recreation in areas adjacent to the open ways. The rugged terrain of these areas has presented a barrier to vehicle intrusions in the past and would likely continue to do so in the future, although advancing vehicle technology could allow vehicles to enter and affect areas they have not been able to access in the past. • The continued use of these ways would be conditioned on non-impairment of wilderness suitability.	The potential impacts to naturalness and solitude from vehicle intrusions would be the greatest among the alternatives. • The continued use of these ways would be conditioned on non-impairment of wilderness suitability.	motor vehicle use (44.0 miles total), resulting in more potential impacts to wilderness characteristics than under Alternatives N, C, and D but less than Alternative A. • The continued use of these ways would be conditioned on non-impairment of wilderness suitability.		
Wild and Scenic Rivers	Under all alternatives, all or parts of seven eligible rivers totaling 98 river miles are within WSAs, including most of the Dirty Devil River and its side drainages. This represents 73 percent of the eligible river miles. The outstandingly remarkable values of these river segments would be protected by WSA management, which would preclude oil and gas leasing, designate them as VRM I (under Alternative A, the Proposed RMP, Alternative C, and Alternative D), and otherwise protect the values as prescribed by the IMP.				
	There would be no impacts to outstandingly remarkable values because no suitability determination would be made and all eligible river segments would be protected.	There could be potential impacts to the outstandingly remarkable values of eligible segments outside WSAs because no eligible river segments would be recommended as suitable.	There would be no impacts to outstandingly remarkable values within the Fremont Gorge eligible river segment (5 miles) which would be recommended as suitable.	Under Alternatives C and D, all eligible river segments (135 miles) would be recommended as suitable, precluding impacts to outstandingly remarkable values.	

Resource	Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
ACECs	Continue designation and management of the four existing ACECs: • North Caineville Mesa • South Caineville Mesa • Gilbert Badlands • Beaver Wash Canyon. Decisions under Alternative N could pose a threat of irreparable harm to relevant and important values in the following potential ACECs: • Badlands (that portion outside the existing South Caineville and Gilbert Badlands ACECs) • Bull Creek	No ACECs would be designated under Alternative A, with no special management prescriptions for the relevant and important values. Other decisions under Alternative A could pose a threat of irreparable harm to relevant and important values.	The North Caineville Mesa and Old Woman Front would be designated as ACECs and special management prescriptions would apply to these areas under the Proposed RMP. Resource decisions under the Proposed RMP, as well as existing laws, rules, and regulations would protect the relevant and important values of the remaining potential ACECs. Management decisions that provide protection to relevant and important values include, but are not limited to: • VRM Class I and II designation for Class A scenery	All potential ACECs would be designated under Alternatives C and D. Consequently, decisions under Alternatives C and D would pose no threat of irreparable harm to any relevant and important values in any of the potential ACECs.	

Resource	Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
ACECs	• Dirty Devil/North Wash (that portion outside the existing Beaver Wash Canyon ACEC) • Fremont Gorge/ Cockscomb • Henry Mountains • Horseshoe Canyon • Kingston Canyon • Little Rockies • Lower Muddy Creek • Old Woman Front • Parker Mountain • Quitchupah • Rainbow Hills • Sevier Canyon • Thousand Lake Bench • Special Status Species.		• Special management to protect SSS • Special management to protect fish and wildlife and their habitats • Non-WSA lands with wilderness characteristics • Closing or limiting OHV use to designated routes, except in small managed open areas • More oil and gas leases subject to moderate or major constraints • Other management prescriptions, such as those for WSR and WSAs.		
Socioeconomic Environment	Alternative N would continue current management practices. It would continue to allow commodity development and resource extraction to occur at current trends supporting jobs and associated income in the local economy. Continued development of minerals would also	Alternative A gives priority to commodity and resource extraction. Employment and income associated with motorized access, commodity development, and resource extraction could cause a slight increase in employment and income in the local economy compared to Alternative N.	The Proposed RMP seeks to provide a balanced approach to resource management. Managing 78,600 acres of non-WSA lands with wilderness characteristics to protect, preserve, and maintain their wilderness characteristics, 5 miles of WSR segments, and more ACEC areas than	Alternative C would allow for resource uses for economic benefits while increasing protection of natural values. Employment and income associated with motorized access, commodity development, and resource extraction could decrease compared with Alternative N because of	Alternative D would allow for resource uses for economic benefits while maximizing protection of natural values, including 1,160,500 acres of the study area unavailable for oil and gas leasing and 682,600 acres of non-WSA lands with wilderness characteristics.

Resource	Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
	provide tax revenues to the State of Utah and local government entities. Alternative N continues most current land management policies and practices, which would be welcomed by some users in and beyond the socioeconomic study area but found less desirable by many others, who see a variety of adverse impacts and foregone opportunities under current management. Specifically, most of the RFO (77%) would be open for OHV use throughout 1,636,400 acres that could continue to provide ample opportunities for motorized recreation while resulting in increased user conflicts between those interested in motorized recreation and those interested in preservation and non-motorized recreation. It is likely that given current trends, conflicts between these and other resource users would increase.	Additionally, slightly increased mineral development could provide additional tax revenues to the State of Utah and local government entities and could result in increased demands on community services. Existing conflicts between conservation-minded individuals and groups and the pro-development community are expected to rise with increases expected in commodity and resource extraction. In addition, conflicts between certain types of recreationists (motorized and non-motorized) and livestock grazing are expected to continue. Alternative A's limitations to 449,000 acres open to OHV use could produce some impacts on local custom and culture such as some motorized recreation users of BLM lands could be restricted. At the same time provision of increased facilities and no WSR or ACEC designations would improve some recreational experiences for many motorized recreation users and could reduce some	Alternative A (but less than Alternative N) could affect employment and income associated with motorized access, commodity development, and resource extraction, However, employment and income levels are expected to be similar to Alternative A. Additionally, tax revenue from mineral development could be slightly less than Alternative A. Existing conditions and social trends would generally remain the same. Conflicts between conservation-minded individuals and groups and the pro-development community are expected to decline in some areas where resource extraction is restricted. The Proposed RMP would have some favorable impacts on individuals and groups who favor preservation over resource development compared to Alternative A. Specifically management of SRMAs areas would improve some recreational experiences for many non-motorized recreation users and could reduce some	increased restrictions on use of the public lands and harvesting of natural resources. However, businesses that rely on more primitive land uses would benefit. Additionally, restricting mineral development is expected to provide decreased tax revenues to the State of Utah and local government entities, compared to Alternative N. Alternative C could have some adverse impacts on individuals and groups who favor resource development over preservation. Alternative C would somewhat favor persons and groups interested in non-motorized recreation and preservation of habitat, ecosystem, visual, and similar values of natural landscapes from special designations for 135 miles of WSR segments and 886,810 acres of ACECs. However, opportunities for commodity and mineral development, motorized recreation (including 2,601 miles of designated routes of OHV use), and other more traditional uses of	Employment and income associated with motorized access, commodity development, and resource extraction could experience the most affects compared to all the other alternatives because of increased restrictions on use of the public lands and harvesting of natural resources. However, businesses that rely on more primitive land uses would benefit the most from Alternative D. Additionally, restricted mineral development of oil and gas could provide the greatest decrease in tax revenues to the State of Utah and local government entities including slightly reduced state revenues from potential losses to SITLA. Alternative D would have more pronounced adverse impacts on individuals and groups who favor resource development over preservation. Alternative D would most favor persons and groups interested in non-motorized recreation and preservation of habitat, ecosystem, visual, and similar values of natural

Resource	Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
		conflicts with non-motorized users. Alternative A would include land and vegetation treatments to increase livestock forage availability that would be welcomed by livestock grazing interests.	conflicts with motorized users. In addition, conflicts between certain types of recreationists (motorized and non-motorized) and livestock grazing are expected to decline in some areas.	BLM lands would still exist. Impacts are not expected to affected government services.	landscapes. However, opportunities for commodity and mineral development, motorized recreation, and other more traditional uses of BLM lands would still exist. Impacts are not expected to affected government services.
Socioeconomic Environment	Livestock grazing would continue to generate some economic benefits from livestock operations (depending on available AUMs), and social values of ranching would continue.				
Environmental Justice	There are no environmental justice populations in the socioeconomic study area, and actions required to identify and mitigate impacts to such populations are not required.				
Health and Safety	• None of the land allocations or prescriptions proposed in Chapter 2 would affect BLM's ability to deal with hazardous and solid wastes within the RFO. • None of the management actions proposed in Chapter 2 would increase public exposure to the risks associated with abandoned mines within the RFO.				

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CHAPTER 3—AFFECTED ENVIRONMENT

3.1 INTRODUCTION

This chapter describes the existing conditions for Bureau of Land Management (BLM) resources, resource uses, special designations, and the socioeconomic environment within the Richfield Field Office (RFO) planning area. A variety of laws, regulations, policies, and other requirements direct management of resources and resource uses on public lands administered by the BLM. The affected environment is used as the baseline of existing conditions against which the impacts of the different alternatives are analyzed and compared in Chapter 4.

3.2 OVERVIEW OF THE PLANNING AREA

The planning area encompasses 5.4 million acres in Sanpete, Sevier, Piute, and Wayne counties, and portions of Garfield County. There are also 21,500 acres of Kane County within the planning area. These acres, however, lie entirely within Glen Canyon National Recreation Area (NRA) so no decisions within this RMP will affect those lands. Within this area, BLM manages 2.1 million acres of public land surface and mineral estate, and an additional 95,000 acres of split estate lands (federal minerals where the surface estate is in state or private ownership). The BLM also has administrative responsibility for 2,082,865 acres of mineral estate where the surface is managed by other federal agencies (U.S. Forest Service [USFS] and National Park Service [NPS]). Noted geographic features of the RFO include the Henry Mountains, Parker Mountain, Fremont River, Dirty Devil River, Gilbert Badlands, and Factory Butte. Acreage calculations used in this chapter and elsewhere in this document reflect current data in BLM's geographic information system (GIS) and may differ from acreages displayed in older documents that were calculated by other methods. In this document, the term "planning area" applies to all lands within the 5 county area regardless of surface ownership. The term "Richfield Field Office" (RFO) applies only to the BLM-administered public lands and resources within the planning area. All acres in text and tables represent surface acres unless otherwise noted.

3.2.1 Physiography

The planning area is located primarily in south-central Utah and lies almost entirely within the Colorado Plateau and the Colorado Plateau-Basin and Range Transition physiographic provinces (Hunt 1974, Stokes 1986) except for a small portion of northern Sanpete County, which is within the Middle Rocky Mountains province.

As shown on Map 3 of the *Mineral Potential Report* (BLM 2005b), the eastern part of the planning area is in the Colorado Plateau province. This area is characterized by relatively flat-lying sedimentary strata uplifted to elevations between 5,000 and 10,000 feet above sea level, and that are predominantly Paleozoic to Mesozoic in age. In places, the strata are deeply incised as canyons; in others, they are relatively broad bench lands. Strata in the eastern part of the planning area are intruded by igneous rocks that form the Henry Mountains.

The western part of the planning area is in the Colorado Plateau-Basin and Range Transition Zone. This province has similarities to the Colorado Plateau to the east and to the Basin and Range to the west. Similarly to the Colorado Plateau, the sedimentary strata in the Transition Zone are relatively flat lying. Similarly to the basin and range, the physiography of the Transition Zone includes fault-bounded, north-

trending ranges that are separated by valleys. In addition, the Sevier and Sanpete Valleys and adjacent ranges are part of one of the world's classic fold-and-thrust belts (DeCelles and Coogan 2006). Many of the ranges are capped by Tertiary volcanic rocks. One of the largest volcanic fields in the United States is the Marysvale Volcanic Field, which includes the Tushar Mountains and parts of adjacent plateaus.

The southern end of the Middle Rocky Mountains province extends into the northern highlands of Sanpete County along the drainage divide between the Spanish Fork and San Pitch rivers. Rocks in the area include Upper Cretaceous and Tertiary strata similar to those present in the Colorado Plateau to the east, along with Middle Tertiary volcanic deposits of the Moroni Formation.

3.2.2 Topography and Drainage

Overall, elevations across the planning area range from a high of 12,173 feet on Mount Delano, located on the crest of the Tushar Mountains in the Fishlake National Forest, to a low of around 3,700 feet on Lake Powell in Glen Canyon NRA. Mountain summits are typically 9,000 to 11,000 feet in elevation, with valley bottoms at 5,000 feet. The Green and Colorado rivers drain the eastern portion of the planning area, whereas areas to the west have internal drainage to either the Sevier or Utah Lake basin. The Sevier River, which drains most of the western portion of the planning area, discharges to Sevier Lake.

3.3 PHYSICAL, BIOLOGICAL, AND CULTURAL RESOURCES

3.3.1 Air Resources

This section describes the climate and existing air quality in the region potentially affected by alternatives described in Chapter 2. Air pollutants addressed in this Proposed RMP/Environmental Impact Statement (EIS) include criteria pollutants, hazardous air pollutants, and compounds that could cause visibility impairment or atmospheric deposition. Regional air quality is influenced by the interaction of several factors, including meteorology, climate, the magnitude and spatial distribution of local and regional air pollutant sources, and the chemical properties of emitted air pollutants. Elements of air quality addressed in this analysis include ambient air quality concentrations, visibility, and atmospheric deposition. Chapter 3 of the *Management Situation Analysis* (MSA) contains detailed information concerning air quality (BLM 2004a).

3.3.1.1 Global Climate Change

Ongoing scientific research has identified potential impacts of climate changing pollutants on the global climate. These pollutants are commonly called "greenhouse gases" and include carbon dioxide (CO_2), methane, nitrous oxide, water vapor, and several trace gas emissions. Through complex interactions on a regional and global scale, these emissions cause a net warming effect of the atmosphere, primarily by decreasing the amount of heat energy radiated by the Earth back into space. Although climate changing pollutant levels have varied for millennia (along with corresponding variations in climatic conditions), recent industrialization and burning of fossil carbon sources have caused CO_2 concentrations to increase dramatically and are likely to contribute to overall climatic changes, typically referred to as global warming. Increasing CO_2 concentrations also lead to preferential fertilization and growth of specific plant species.

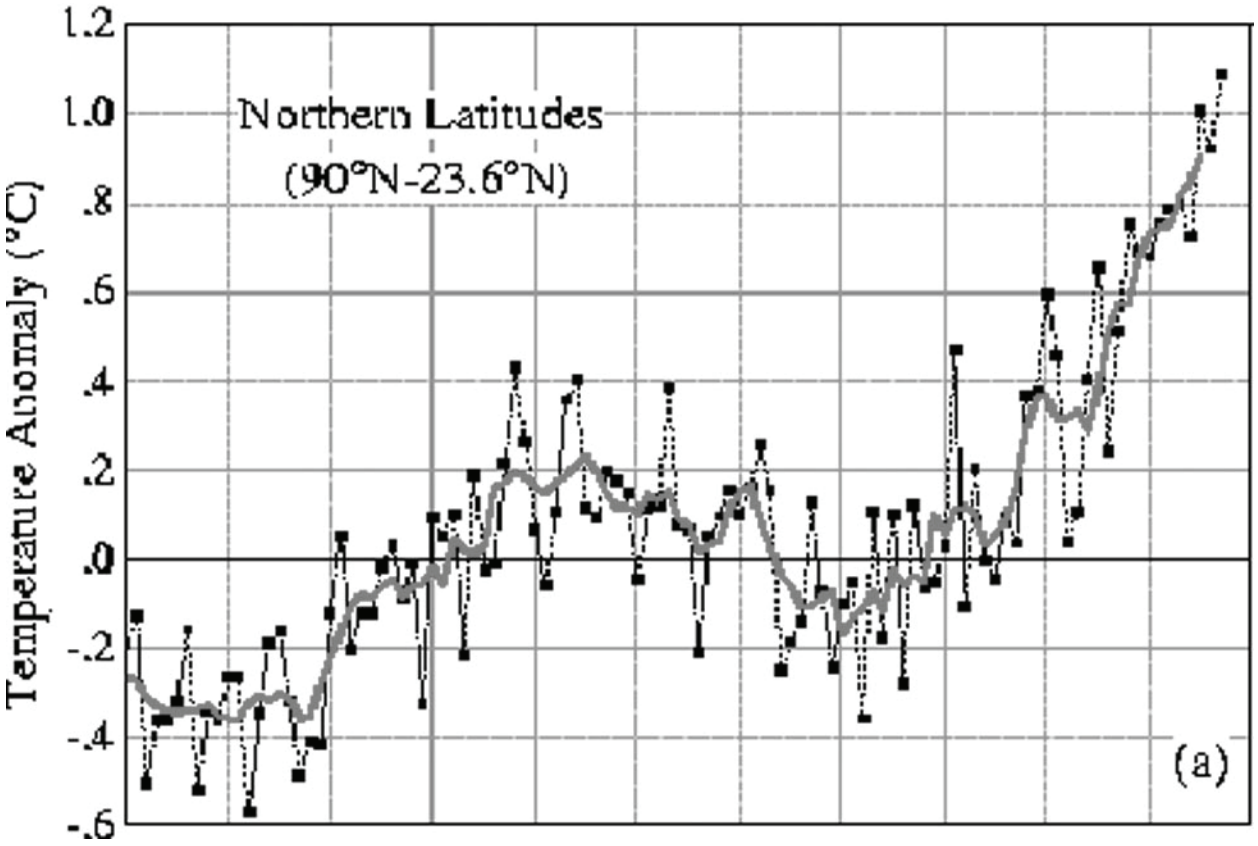
Global mean surface temperatures have increased nearly 1.0°C (1.8°F) from 1890 to 2006 (Goddard Institute for Space Studies, 2007). However, observations and predictive models indicate that average temperature changes are likely to be greater in the Northern Hemisphere. Figure 3-1 demonstrates that northern latitudes (above 24° N) have exhibited temperature increases of nearly 1.2°C (2.1°F) since 1900, with nearly a 1.0°C (1.8°F) increase since 1970. Without additional meteorological monitoring systems, it is difficult to determine the spatial and temporal variability and change of climatic conditions, but increasing concentrations of these greenhouse gases are likely to accelerate the rate of climate change.

The Intergovernmental Panel on Climate Change (IPCC) has recently completed a comprehensive report assessing the current state of knowledge on climate change, its potential impacts, and options for adaptation and mitigation. At printing of this PRMP/FEIS, this assessment is available on the IPCC website at www.ipcc.ch/. According to this report, global climate change may ultimately contribute to a rise in sea level, destruction of estuaries and coastal wetlands, and changes in regional temperature and rainfall patterns, with major implications to agricultural and coastal communities. The IPCC has suggested that the average global surface temperature could rise 1 to 4.5 degrees Fahrenheit (°F) in the next 50 years, with significant regional variation. The National Academy of Sciences (2006) confirmed these findings but also indicated that there are uncertainties regarding how climate change may affect different regions. Computer models indicate that such increases in temperature will not be equally distributed globally but are likely to be accentuated at higher latitudes, such as in the Arctic, where the temperature increase may be more than double the global average (BLM 2007a). Also, warming during the winter months is expected to be greater than during the summer, and increases in daily minimum

temperatures are more likely than increases in daily maximum temperatures. Vulnerabilities to climate change depend considerably on specific geographic and social contexts.

BLM recognizes the importance of climate change and the potential effects it may have on the natural environment. Several activities occur within the planning area that may generate emissions of climate changing pollutants. For example, oil and gas development, large fires, and recreation using combustion engines can potentially generate CO_2 and methane. Wind erosion from disturbed areas and fugitive dust from roads along with entrained atmospheric dust have the potential to darken glacial surfaces and snow packs, resulting in faster snowmelt. Other activities may help sequester carbon, such as managing vegetation to favor perennial grasses and increase vegetative cover, which may help build organic carbon in soils and function as "carbon sinks."

Figure 3-1. Annual Mean Temperature Change for Northern Latitudes (24 - 90° N)



Source: Goddard Institute for Space Studies (2007)

3.3.1.2 Climate

Indicators of climate include temperature, precipitation, wind, barometric pressure, humidity, sunshine and cloudiness. Issues of concern with respect to climate include climate variability (how changes in climate may affect resources) and climate change (how human activities and other factors may affect climate). Climate change indicators reported in this RMP include monitored (measured by an instrument) values.

An area's climate is determined mainly by latitude, distance from the ocean and elevation. The world's eco-regions are characterized by typical climate and are classified by domain, division and province. Domains include polar, humid temperate, humid tropical and dry. The west coast and the eastern half of the United States are classified as humid temperate, the southern tip of Florida and Hawaii are classified as humid tropical, most of Alaska is classified as polar, with southern Alaska classified as humid temperate, and most of the western United States is classified as dry. Dry climates are the most extensive climate group, occurring on more than one quarter of the earth's surface. Eco-region divisions of the dry domain include desert (temperate, temperate mountainous and tropical/sub-tropical) and steppe (temperate, temperate mountainous, tropical/sub-tropical, and tropical/sub-tropical mountainous). Steppes are typically grasslands of short grasses, with shrubs and trees. The eco-region of most of the Richfield planning area is classified as temperate, dry (semidesert), intermountain and mountain area. (http://www.fs.fed.us/land/ecosysmgmt/ecoreg1_home.html).

3.3.1.3 Ambient Air Quality Standards

The Clean Air Act (CAA) Amendment of August 7, 1977 (Section 160) identifies the following air quality areas:

- Class I—the most restrictive class applies to areas in which practically any change in air quality would be considered significant.
- Class II—this class applies to areas in which deterioration normally accompanying moderate, well-controlled growth would be considered insignificant.
- Class III—this class applies to areas in which deterioration to ambient standards is allowed.

Most of the RFO and all of the lands managed by the BLM are generally classified as a Class II air quality area (40 Code of Federal Regulations [CFR] Part 81.345). Five Class I areas are in close proximity or within the boundaries of the planning area: Capitol Reef National Park and a portion of Canyonlands National Park are within the planning area boundary; and Arches National Park, Bryce Canyon National Park, Zion National Park, and the remainder of Canyonlands National Park are located adjacent to or near the planning area (Map 3-2). Protection of air quality in these Class I areas may require additional mitigation or protection measures to avoid potential impacts from BLM authorized activities.

Overall air quality in the RFO is good. Based on the region's remoteness, low population, limited industrial development and a lack of major urban communities, counties in the planning area are designated as "attainment" or "unclassifiable" with respect to National Ambient Air Quality Standards (NAAQS) for all criteria pollutants. As of May 2006, the air quality in the planning area had not been designated as "non-attainment" for any criteria pollutant. In addition, based on the *2006 Division of Air Quality Annual Report,* the area is likely to be in attainment with respect to the new particulate matter (PM) 2.5 standards enacted in September 2006, although the final determination has not yet been made (Utah Department of Air Quality [UDAQ] 2007).

The air pollutant of most concern on public lands that could affect the Class I areas is particulate matter, which may originate from fire, fugitive dust, or vehicle use. Air resources are affected predominantly by existing concentrations of various pollutants and the climatic and meteorological conditions. Map 3-2 shows the Class I air quality areas within and adjacent to the planning area.

3.3.1.4 Air Pollutant Concentrations

Air pollutant concentration usually refers to the mass of pollutants present in a volume of air and can be reported in units of micrograms per cubic meter ($\mu g/m^3$). Concentration can also be reported on a volume basis as parts per billion (ppb) and parts per million (ppm).

Air pollutant concentration monitoring networks in Utah include the **S**tate & **L**ocal **A**ir **M**onitoring **S**ystem (SLAMS), Tribal monitoring networks and the **C**lean **A**ir **S**tatus & **T**rends **Net**work (CASTNet). SLAMS stations are located in urban areas and measure "criteria pollutants". The Utah Department of Environmental Quality operates the SLAMS network to establish compliance with regulatory concentration standards. CASTNet stations are located in remote areas and measure concentrations of compounds that are of interest to ecosystem health.

Criteria Air Pollutants

Criteria air pollutants are those for which national concentration standards have been established. Measured pollutant concentrations greater than these standards represent a risk to human health or welfare. Criteria air pollutants include carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), ozone (O_3), particulate matter (PM_{10}, $PM_{2.5}$) and lead (Pb). Criteria air pollutant concentrations are compared to National Ambient Air Quality Standards (NAAQS).

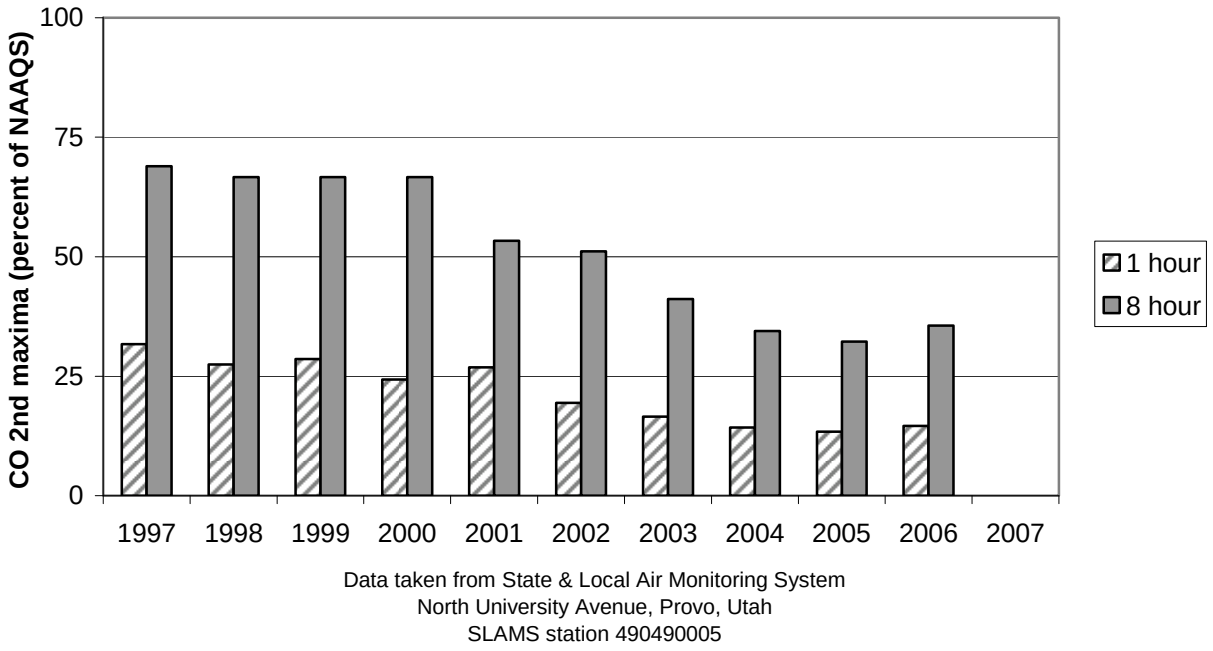
Some criteria air pollutant modeled concentrations are compared to the Prevention of Significant Deterioration (PSD) increments. The goal of the PSD program is to protect public health and welfare from air pollution effects, notwithstanding attainment and maintenance of the NAAQS, and "to preserve, protect and enhance the air quality in national parks, national wilderness areas, national monuments, national seashores and other areas of special national or regional natural, recreation, scenic or historic value." PSD increments have been established for NO_2, SO_2 and PM_{10}.

Specific monitoring protocols, known as reference (or equivalent) methods, must be followed to determine compliance with UAAQS and NAAQS. The UDEQ performs regulatory monitoring throughout the State of Utah for CO, NO_2, O_3, PM_{10} and $PM_{2.5}$.

Carbon Monoxide

CO is an odorless, colorless gas formed during combustion of any carbon-based fuel, such as operation of engines, fireplaces, furnaces, etc. High concentrations of CO affect the oxygen-carrying capacity of the blood and can lead to unconsciousness and asphyxiation. Forest fires are natural sources of CO. No CO monitoring has been performed in the Richfield area. However, CO data has been collected at Provo, Utah since 1997. Figure 3-2 shows the results. CO levels have been decreasing and no violations of the ambient air quality standards are noted. (Since CO levels are directly related to automobile traffic, these data should be considered high for Richfield.)

Figure 3-2. Carbon Monoxide Concentrations Near the Richfield Planning Area

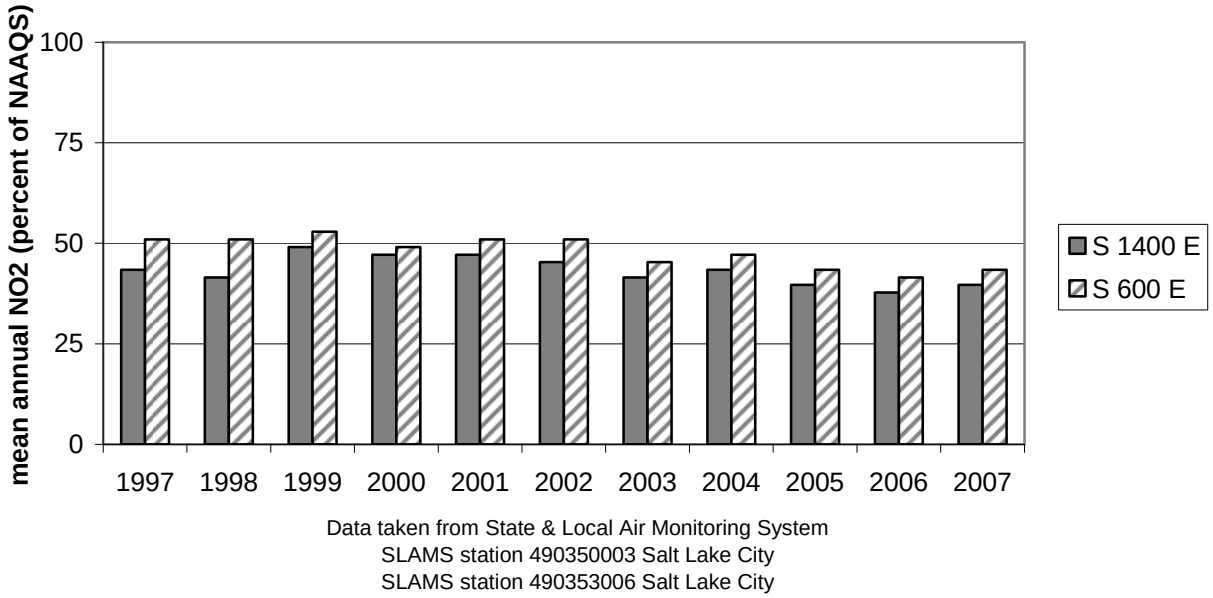


Data taken from State & Local Air Monitoring System
North University Avenue, Provo, Utah
SLAMS station 490490005

Nitrogen Dioxide

NO_2 is a highly reactive compound formed at high temperatures during operation of fossil fuel combustion, At high concentrations, it can form a red-brown gas. At concentrations in excess of the EPA air quality standard, it is a respiratory irritant, however, all areas of the United States are in compliance with this air quality standard. During fossil fuel combustion, NO is released into the air which reacts in the atmosphere to form NO_2. NO plus NO_2 is a mixture of nitrogen gases, collectively called nitrogen oxides (NO_x). NO_x emissions can convert to ammonium nitrate particles and nitric acid which can cause visibility impairment Bacterial action in soil can be a natural source of nitrogen compounds. No NO_2 monitoring has been performed in the Richfield area. However, NO_2 data has been collected at Salt Lake City, Utah since 1997. Figure 3-3 shows the results. NO_2 levels have been decreasing and no violations of the ambient air quality standards are noted. (Since NO_2 levels are related to automobile traffic and industrial emissions, these data should be considered high for Richfield.)

Figure 3-3. Mean Annual Nitrogen Dioxide Concentrations Near the Richfield Planning Area



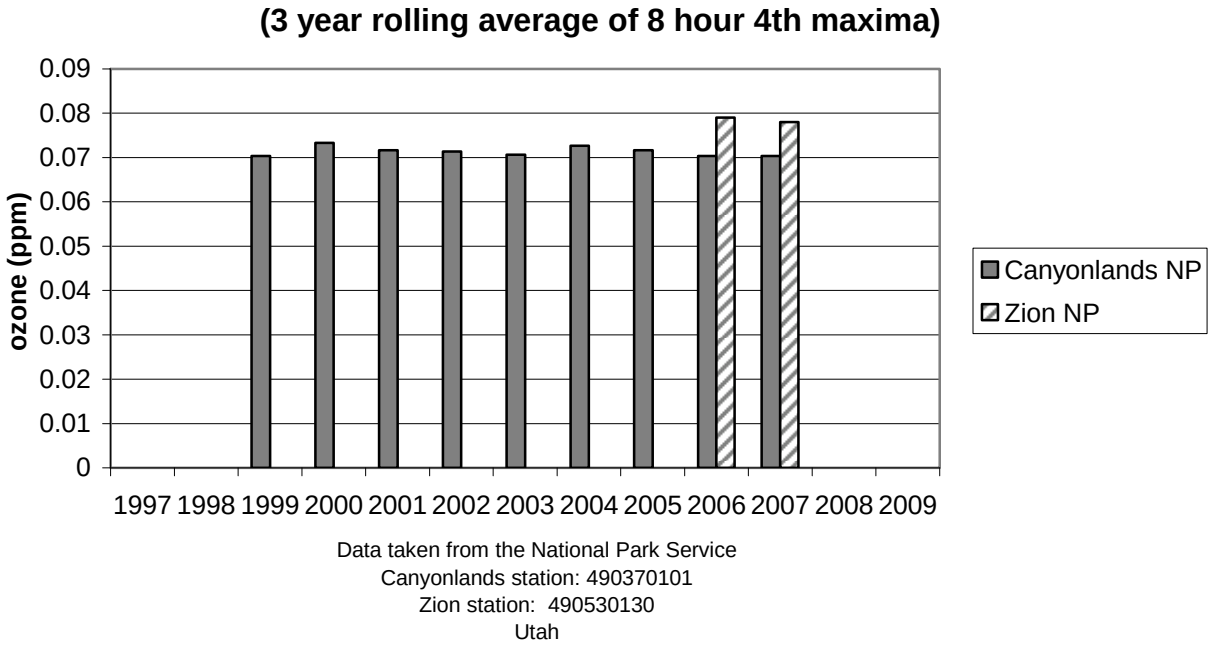
Data taken from State & Local Air Monitoring System
SLAMS station 490350003 Salt Lake City
SLAMS station 490353006 Salt Lake City

Ozone

O_3 is a faint blue gas that is generally not emitted directly into the atmosphere, but is formed from NO_x and volatile organic compounds (VOC) emissions. Internal combustion engines are the main source of NO_x. Sources of VOC include paint, varnish and some types of vegetation (i.e., sage brush and conifers). O_3 is a strong oxidizing chemical that can burn lung and eyes, and damage plants.

Ozone data has been collected at Zion National Park since 1999 and Canyonlands national Park since 2006. Figure 3-4 shows the results. It is noted that ozone levels could exceed the newly proposed ambient air quality standard. The current 8-hour NAAQS for ozone is 0.075 ppm.

Figure 3-4. Ozone Concentrations Near the Richfield Planning Area



Data taken from the National Park Service
Canyonlands station: 490370101
Zion station: 490530130
Utah

Particulate Matter

Particulate matter (i.e., soil particles, hair, pollen, etc.) is essentially the small particles suspended in the air which settle to the ground slowly and may be re-suspended if disturbed. Separate allowable concentration levels for particulate matter are based on the relative size of the particle:

- Particulate Matter (PM_{10}), particles with diameters less than 10 micrometers, are small enough to be inhaled and can cause adverse health effects.
- Fine Particulate Matter ($PM_{2.5}$), particles with diameters less than 2.5 micrometers, are so small that they can be drawn deeply into the lungs and cause serious health problems. These particles are also the main cause of visibility impairment.

PM concentrations for monitoring sites near the Richfield area are shown in Figure 3-5 through Figure 3-8. The measured concentrations show compliance with ambient air quality standards, except with the new 24 hour average $PM_{2.5}$ standard. The current 24-hour NAAQS for $PM_{2.5}$ is 35 micrograms/m^3 and the annual arithmetic mean is 15.0 micrograms/m^3.

Figure 3-5. Twenty Four Hour $PM_{2.5}$ Concentrations Near the Richfield Planning Area

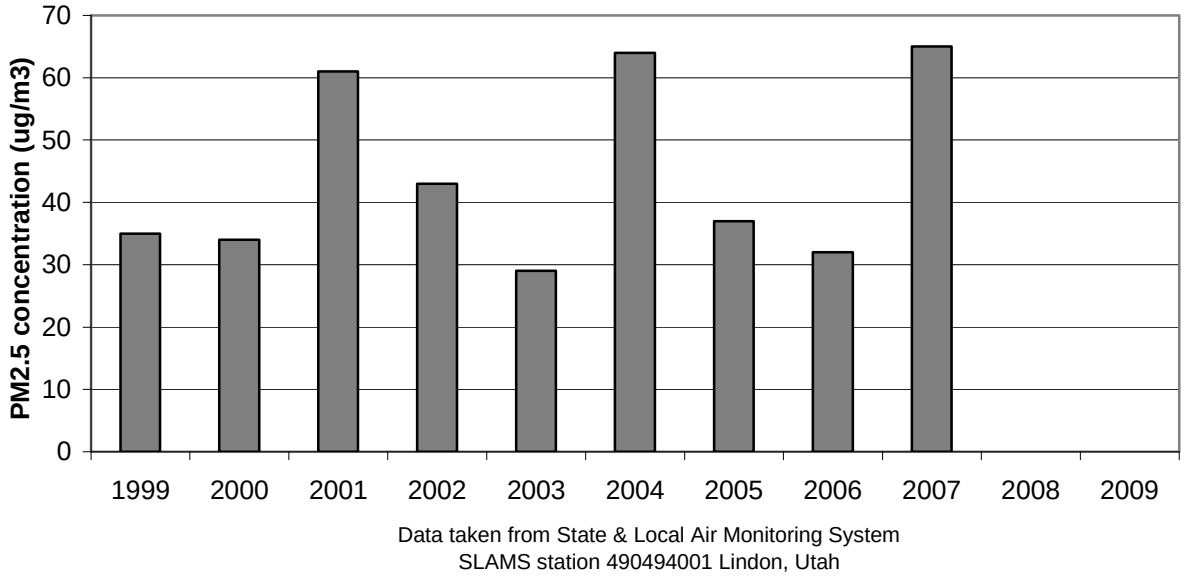


Figure 3-6. Mean Annual $PM_{2.5}$ Concentrations Near the Richfield Planning Area

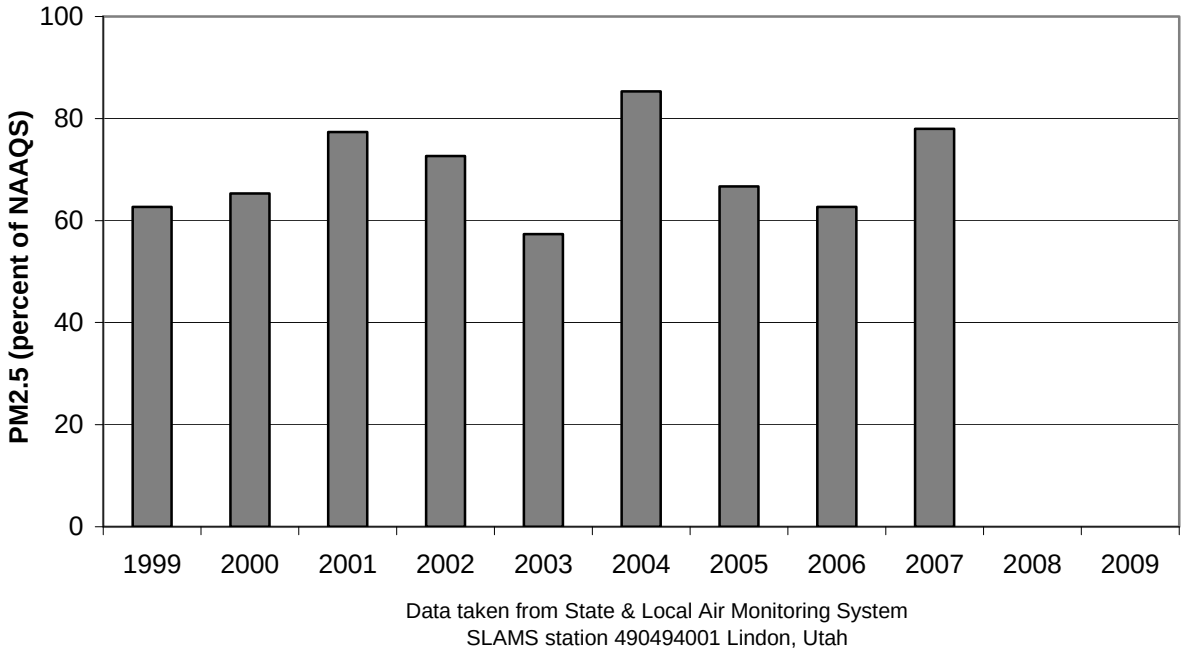
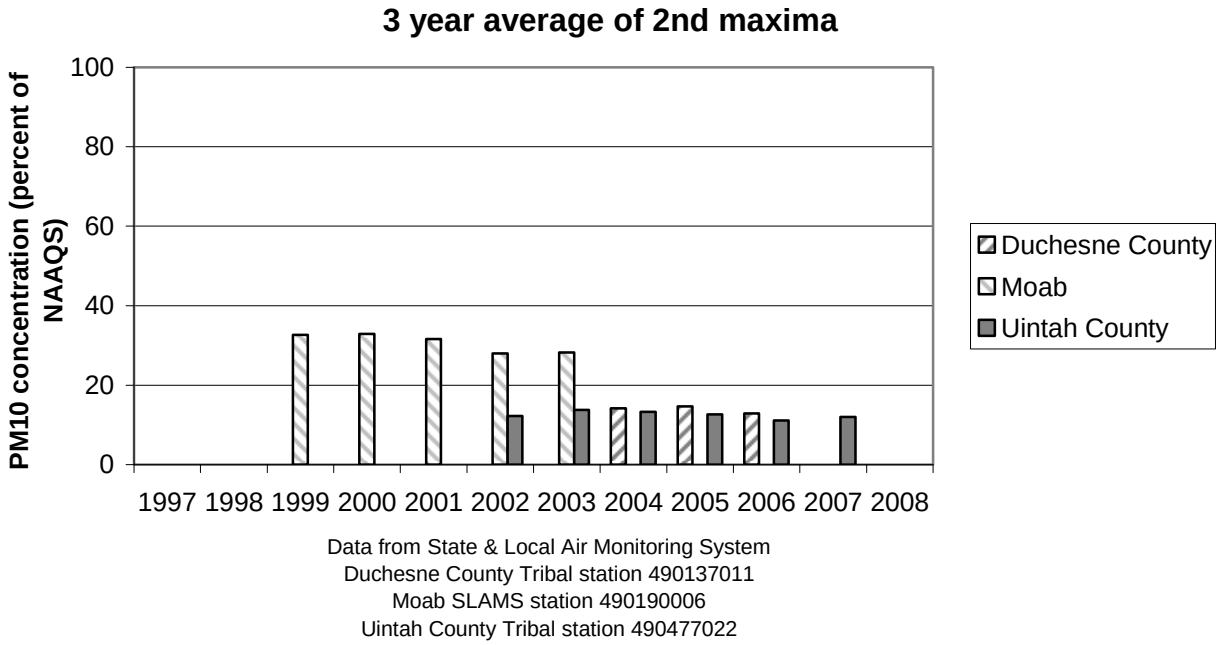
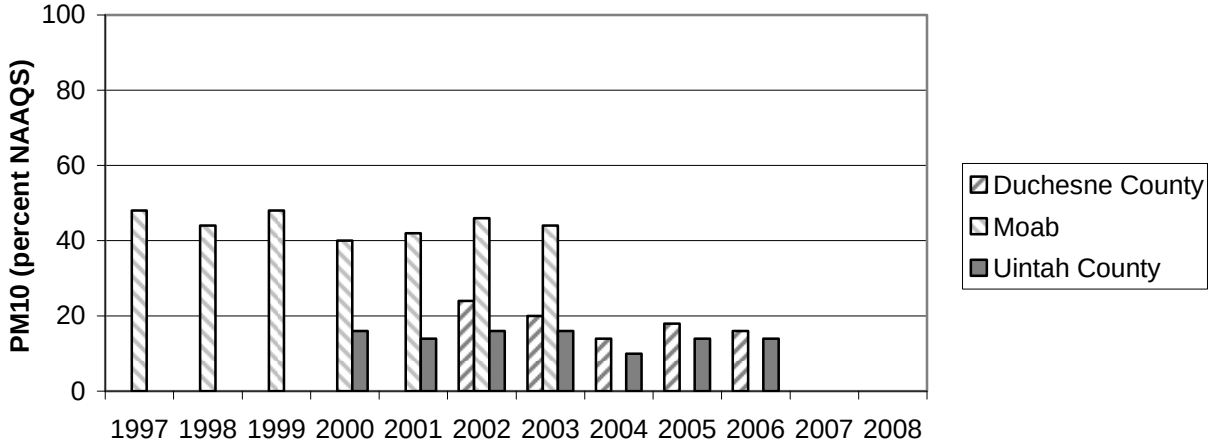


Figure 3-7. Twenty Four Hour PM_{10} Concentrations Near the Richfield Planning Area



Data from State & Local Air Monitoring System
Duchesne County Tribal station 490137011
Moab SLAMS station 490190006
Uintah County Tribal station 490477022

Figure 3-8. Mean Annual PM_{10} Concentrations Near the Richfield Planning Area



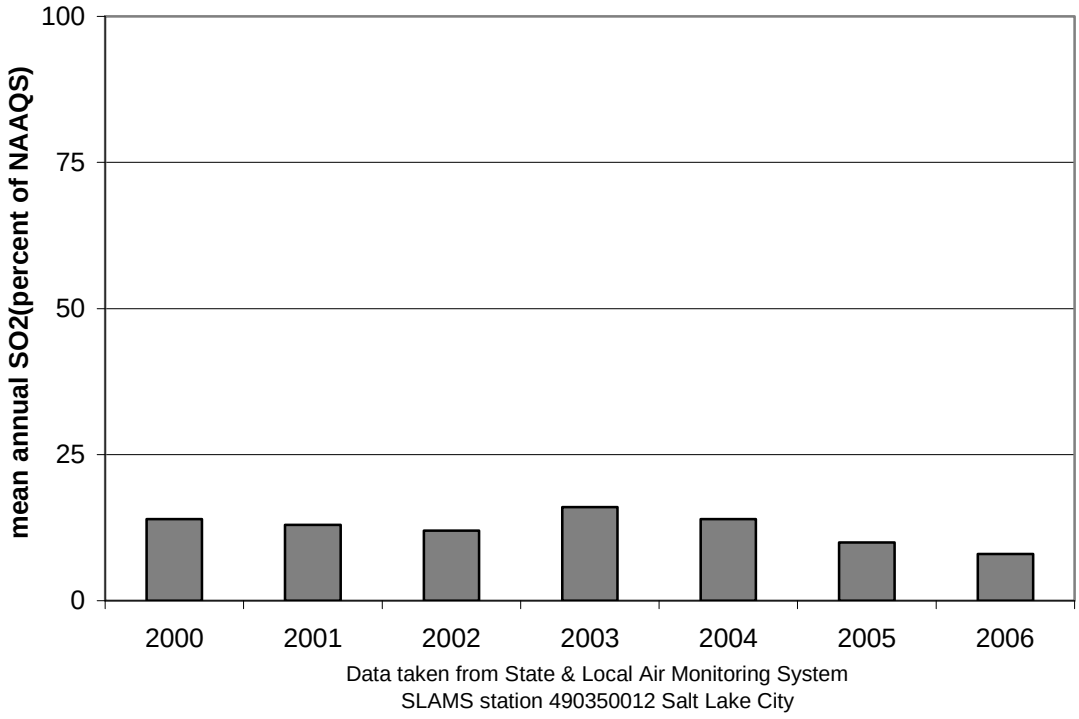
Data from State & Local Air Monitoring System
Duchesne County Tribal station 490137011
Moab SLAMS station 490190006
Uintah County Tribal station 490477022

Sulfur Dioxide

SO_2 forms during combustion from trace levels of sulfur in coal or diesel fuel, and can convert to ammonium sulfate (SO_4^{--}) and sulfuric acid (H_2SO_4) which can cause visibility impairment and acid rain. Volcanoes are natural sources of SO_2.

SO_2 monitoring has been performed at by the State of Utah in and around Salt Lake City. Figure 3-9 shows the annual results at Salta Lake City. SO_2 levels have been slightly decreasing and no violations of the ambient air quality standards are noted.

Figure 3-9. Mean Annual Sulfur Dioxide Concentrations Near the Richfield Planning Area



Nitrogen and Sulfur Compounds

Other air pollutants of interest include nitrogen compounds such as particulate nitrate (NO_3), nitric acid (HNO_3) and ammonium (NH_4), and sulfur compounds such as particulate sulfate (SO_4) and sulfur dioxide (SO_2). Although monitoring of these air pollutants typically does not adhere to reference methods, these concentration data contribute to our understanding of air quality.

The **C**lean **A**ir **S**tatus and **T**rends **Net**work (CASTNet) has measured concentrations of nitric acid, nitrate and ammonium, as well as ozone, sulfur dioxide and sulfate, in the United States since the late 1980's. There is one CASTNet stations in Utah at Canyonlands NP. Figure 3-10 shows mean annual concentrations of nitrogen compounds in Canyonlands National Park from 1995. These data are representative of the area potentially affected by BLM actions within the Richfield Planning area and are less than those typical for remote areas.

Figure 3-10. Mean Annual Nitrogen Compounds Concentrations Near the Richfield Planning Area

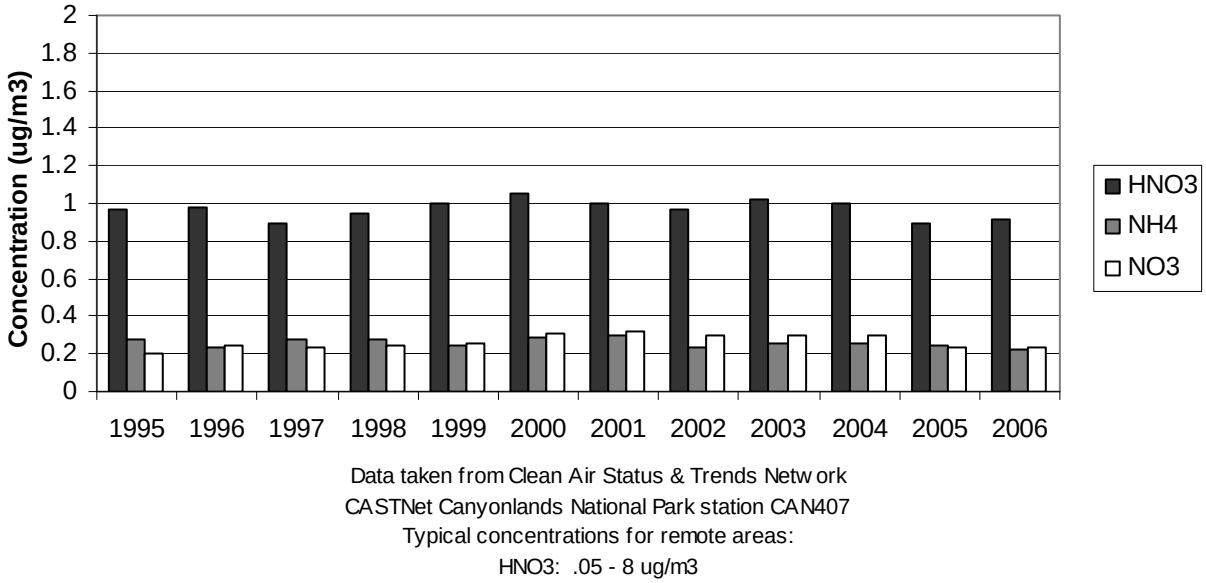
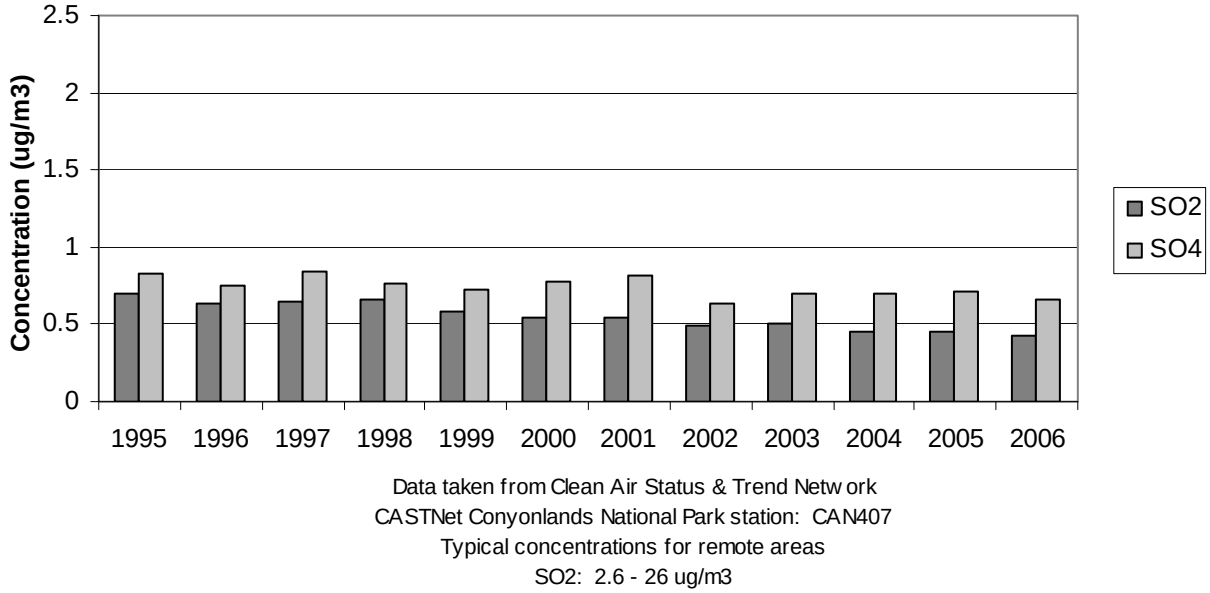


Figure 3-11 shows mean annual concentrations of sulfur compounds in Canyonlands National Park from 1995. These data are representative of the area potentially affected by BLM actions within the Richfield Planning area and are less than those typical for remote areas.

Figure 3-11. Mean Annual Sulfur Compounds Concentrations Near the Richfield Planning Area



Hazardous Air Pollutants

Hazardous air pollutants (HAPs) are those pollutants that are known or suspected to cause cancer or other serious health problems, such as chronic respiratory disease, reproductive disorders or birth defects. The EPA has classified 189 air pollutants as HAPs, including formaldehyde (CH_20), benzene, toluene, ethylbenzene, xylene, and n-hexane.

Potential concentrations of HAPs are compared to inhalation reference concentrations to estimate the risk of health effects.

3.3.1.5 Visibility

Visibility can be defined as the ability to see color, texture and contrast at a distance and can be reported as visual range, in units of distance such as miles.

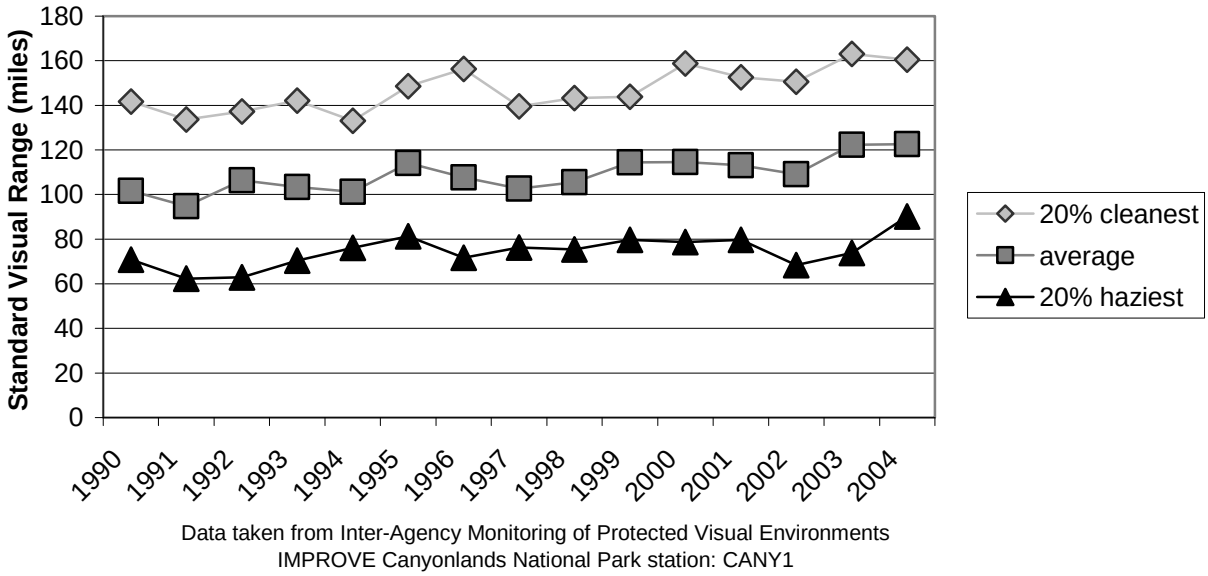
Visibility can be expressed in terms of deciview (dv), a measure for describing perceived changes in visibility. One dv is defined as a change in visibility that is just perceptible to an average person.

Visibility data are calculated for each day, ranked from cleanest to haziest, and reported into three categories:

- 20% cleanest: mean visibility for the 20% of days with the best visibility
- average: the annual mean visibility
- 20% haziest: mean visibility for the 20% of days with the poorest visibility

The IMPROVE network has measured visibility in Class I areas throughout the US. There are 7 IMPROVE stations in Utah: Arches, Bryce Canyon, Canyonlands, Capitol Reef, Lone Pine, Zion and Zion Canyon National Parks. Visibility data have been measured in Canyonlands National Park from 1988 through the present. Mean annual visual range varies from 130 to 162 miles on clear days, 93 to 121miles on average days and 61 to 90 miles on hazy days (Figure 3-12). These data are representative of the area potentially affected by BLM actions within the Richfield planning area.

Figure 3-12. Annual Visibility Near the Richfield Planning Area



Data taken from Inter-Agency Monitoring of Protected Visual Environments
IMPROVE Canyonlands National Park station: CANY1

3.3.1.6 Atmospheric Deposition

Atmospheric deposition refers to the processes by which air pollutants are removed from the atmosphere and deposited on terrestrial and aquatic ecosystems, and is reported as the mass of material deposited on an area (kilogram per hectare - year). dry deposition (gravitational settling of particles and adherence of gaseous pollutants to soil, water and vegetation).

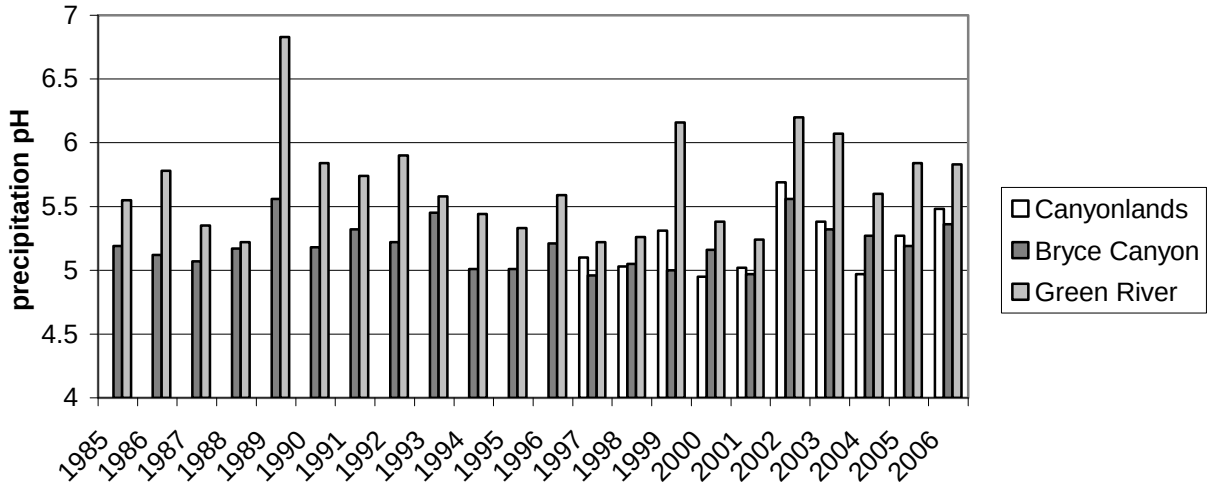
Atmospheric deposition can cause acidification of lakes and streams. One expression of lake acidification is change in acid neutralizing capacity (ANC), the lake's capacity to resist acidification from atmospheric deposition. Acid neutralizing capacity is expressed in units of micro-equivalents per liter (μeq/l).

Wet Deposition

Wet deposition refers to air pollutants deposited by precipitation, such as rain and snow. One expression of wet deposition is precipitation pH, a measure of the acidity or alkalinity of the precipitation.

There are 5 NADP stations in Utah: Logan, Murphy Ridge, Green River, Bryce Canyon NP and Canyonlands NP. The NADP stations in Bryce Canyon NP and Canyonlands NP have assessed precipitation chemistry from 1985 and 1997 through to the present. Figure 3-13 shows precipitation pH has ranged from 4.9 to 6.8.

Figure 3-13. Mean Annual Precipitation pH Near the Richfield Planning Area



Data taken from National Atmospheric Deposition Program
NADP Canyonlands station: UT09
NADP Bryce Canyon station: UT99
NADP Green River station: UT98
Normal range of precipitation pH:

Dry Deposition

Dry deposition refers to the transfer of airborne gaseous and particulate material from the atmosphere to the Earth's surface.

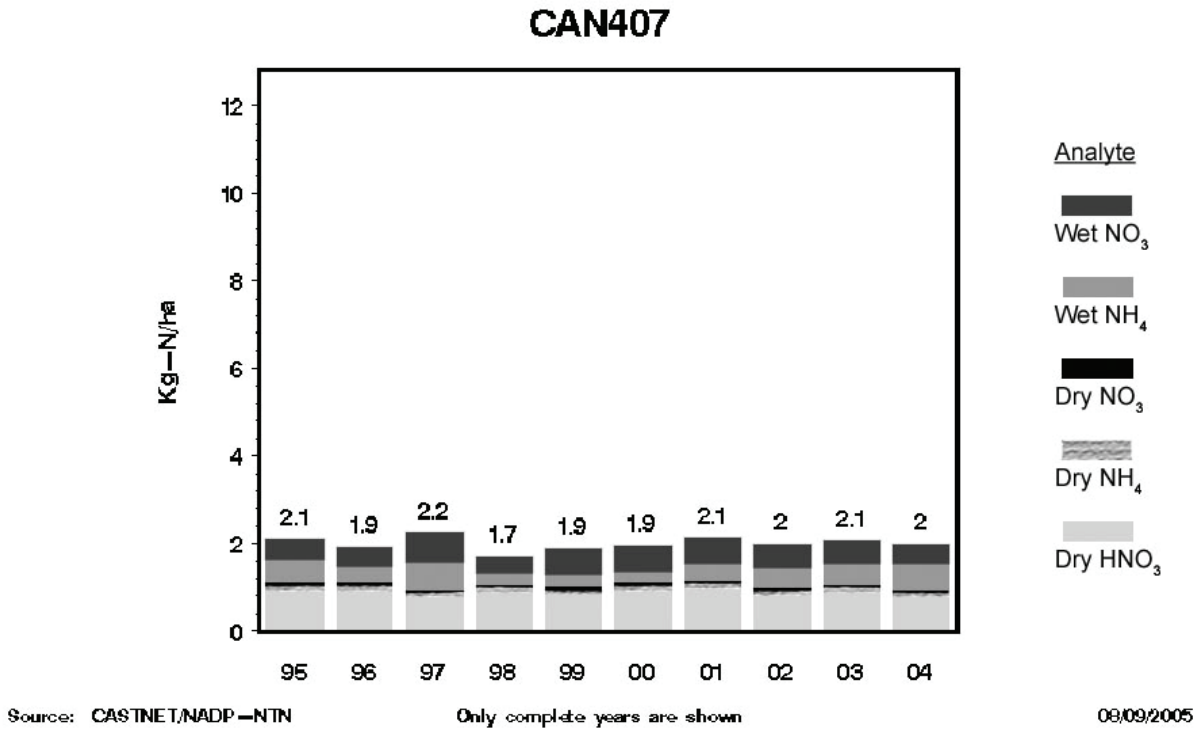
The **C**lean **A**ir **S**tatus and **T**rends network (CASTNet) has measured dry deposition of ozone (O_3), sulfur dioxide (SO_2), nitric acid (HNO_3), sulfate (SO_4^{--}), nitrate (NO_3^-), and ammonium (NH_4^{++}), in the United States since the late 1980's. There is one CASTNet stations in Utah at Canyonlands NP.

Total Deposition

Total deposition refers to the sum of airborne material transferred to the Earth's surface by both wet and dry deposition. Total nitrogen deposition is calculated by summing the nitrogen portion of wet and dry deposition of nitrogen compounds, and total sulfur deposition is calculated by summing the sulfur portion of wet and dry deposition of sulfur compounds.

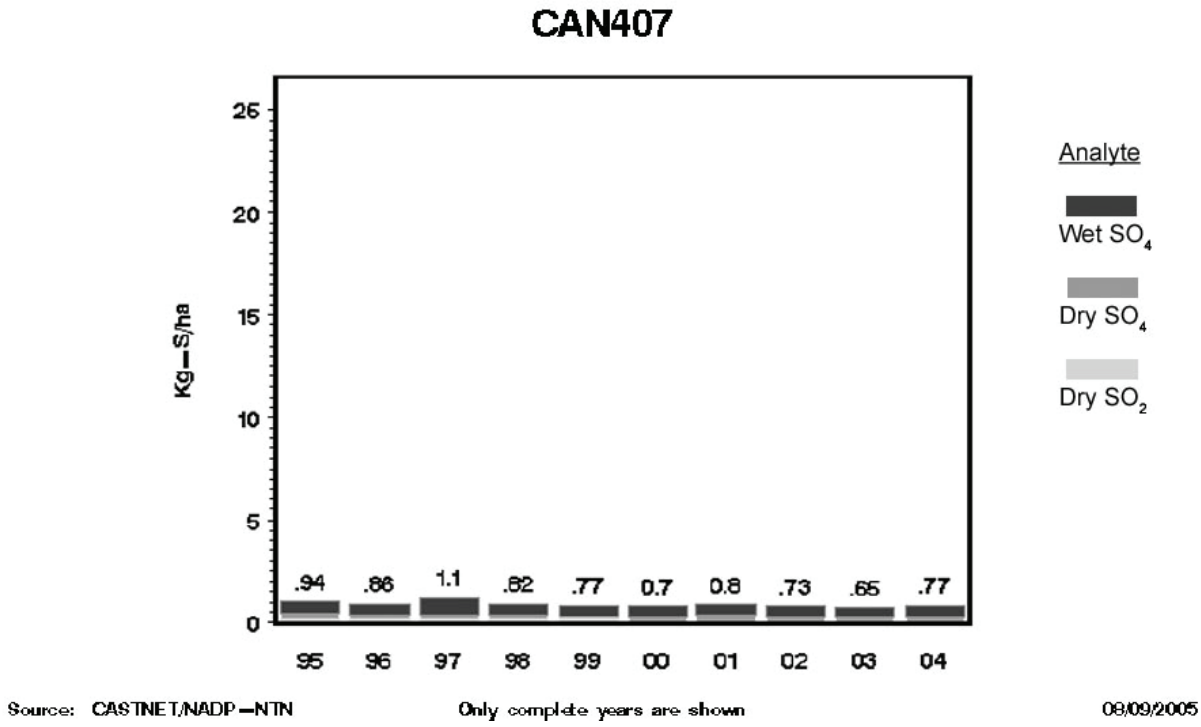
Total deposition has been measured at Canyonlands National Park from 1995 through the present. Total nitrogen deposition has ranged from 1.7 to 2.2 kg/hectare-year since 1995 (Figure 3-14).

Figure 3-14. Total Nitrogen Deposition at Canyonlands National Park



Total sulfur deposition has ranged from 0.7 to 1.1 kg/hectare-year since 1995 (Figure 3-15).

Figure 3-15. Total Sulfur Deposition at Canyonlands National Park



Lake Chemistry

Atmospheric deposition can cause acidification of lakes and streams. One expression of lake acidification is change in acid neutralizing capacity (ANC), the lake's capacity to resist acidification from atmospheric deposition. Acid neutralizing capacity is expressed in units of micro-equivalents per liter (μeq/l). Lakes with ANC values of from 25 to 100 μeq/l are considered to be sensitive to atmospheric deposition, lakes with ANC values of from 10 to 25 μeq/l are considered to be very sensitive, and lakes with ANC value of less than 10 are considered to be extremely sensitive. Lakes within the Uinta Mountains have ANC values 10-150 μeq/l.

3.3.2 Soil Resources

Soil data and associated ecological site descriptions are used in evaluating the site's potential productivity and are critical to evaluating rangeland health as well as determining impacts of various management activities. Soil erosion is one indicator of rangeland health. Soil surveys have been completed for about three-quarters of the planning area, although some surveys are more than 20 years old. Published surveys include Fairfield-Nephi Area (1984), Millard County, East (2003), Sanpete Valley (1981), and the Henry Mountains Area (1990). The National Resources Conservation Service (NRCS) is currently revising the survey for Sevier County. Piute County and the western portion of Wayne County lack soil surveys and ecological site inventories.

3.3.2.1 Soil Resource Condition

Soil composition is one factor that determines vegetation growth and wildlife habitats. Soil types also influence water quality, salinity, and erosion throughout the planning area. BLM considers impacts of various management decisions on soils and related impacts to salinity control, water quality, and erosion. A comprehensive inventory of the condition of soil resources has not been conducted across the planning area, although rangeland health assessments and other site-specific project monitoring reports may contain some of this kind of information. This section provides an overview of the general soil resource concerns in the RFO.

Soil management problems may arise in the lands managed by the RFO depending on a combination of factors, including soil type, climate, geologic setting, vegetative cover, and how the resources are affected by multiple uses (e.g., recreation, mineral development, grazing). Vegetation is sparse in some of the planning area because of high salinity, a short growing season, and distribution of effective moisture in some soils. Erosion and compaction are two important factors of concern in the planning area. Several areas in the planning area contain soils that are considered to be highly susceptible to wind and water erosion.

Vehicle traffic, herbivore trampling, foot traffic, or any activity that repeatedly causes an impact on the soil surface can cause a compaction layer (Chanasyk and Naeth 1995, Cole 1985, and Thurow *et al.* 1988). Compaction becomes a problem when it begins to limit plant growth, water infiltration, or nutrient cycling processes (Wallace 1987, Willat and Pullar 1983, Thurow *et al.* 1988, Hassink *et al.* 1993). Moist soil is more easily compacted than dry or saturated soil (Hillel 1998).

Soils developed on marine formations are high in gypsum and other salts. High concentrations of these salts at or near the soil surface limit the types and amounts of vegetation present. Badland and gypsum land, which are natural sources of large amounts of salt and sediment, often lack significant vegetation cover but frequently have a thin protective layer, such as rock fragments and/or soil crusts (physical and/or cryptobiotic) that provide some stability. Surface disturbance in these areas may increase the potential for erosion.

Biological soil crusts can be an important ecological component of the stability of certain soil and plant communities. Areas in the eastern portion of the RFO on the Colorado Plateau contain biological soil crusts as a component of the community. There are no inventories of the spatial extent or the condition of the soil crusts within the RFO. The standards and guidelines portion of the Fundamentals of Rangeland Health and Standards and Guidelines for Grazing Administration (43 CFR Subpart 4180) and Utah's *Standards for Rangeland Health and Guidelines for Management* (BLM 1997) compare current soil crust cover to that identified in the ecological site descriptions to determine if current management strategies are meeting standards.

Salt and sediment yield is of major concern in the Colorado River Basin, and erosion from public lands is an important source of sediment and associated salts in the area. Some of this yield is natural or results from relatively stable conditions in an arid or semiarid climate with periodic high-intensity storms and active erosion. The actual contribution of salt and sediment yield to the total Colorado River Basin from drainages in the planning area is unknown. The Colorado River Salinity Control Act guides actions in watersheds of the Colorado River Basin.

3.3.3 Water Resources

The United States is divided and subdivided into successively smaller hydrologic units classified into 4 levels: regions, subregions, accounting units, and cataloging units. In general terms, a hydrologic unit can be defined as any geographic area containing water that naturally drains to a specific outlet. The hydrologic units are arranged within each other from the smallest (cataloging units) to the largest (regions).

The first level of classification divides the nation into major geographic areas, or regions. These geographic areas contain either the drainage area of a major river, such as the Upper Colorado River region, or the combined drainage areas of a series of rivers, such as the Texas-Gulf region, which includes a number of rivers draining into the Gulf of Mexico. The second level of classification divides the regions into subregions. A subregion includes the area drained by a river system, a reach of a river and its tributaries in that reach, a closed basin(s), or a group of streams forming a coastal drainage area. The third level of classification subdivides many of the subregions into accounting units, and the fourth level of classification is the cataloging unit, which is the smallest element in the hierarchy of hydrologic units. A cataloging unit, which is roughly equivalent to a local watershed, is a geographic area representing part or all of a surface drainage basin, a combination of basins, or a distinct hydrologic feature (U.S. Geological Survey [USGS] no date).

The planning area lies within portions of 11 separate watersheds located in the Upper Colorado Hydrologic Region and the Great Basin Hydrologic Region. The RFO is located within both the Colorado River Hydrologic Basin and the Great Basin Hydrologic Region. The Henry Mountains portion of the RFO is located in the Upper Colorado River Sub-basin of the Colorado River Basin, whereas most of the Mountain Valley portion of the RFO is located in the Sevier River Sub-basin of the Great Basin Hydrologic Region. The northernmost portions of the RFO are contained in the Jordan River/Utah Lake Sub-basin of the Great Basin, and the easternmost extent of the Mountain Valley area is located in the Upper Colorado River Sub-basin. The RFO encompasses 120 perennial streams (Table 3-1) and a larger number of intermittent streams.

Table 3-1. Perennial Stream Segments—Richfield Field Office

Antimony Creek	Ax Handle Canyon Creek	Beaver Creek
Benson Creek	Big Hollow Creek	Birch Creek
Box Creek	Brimhall Springs Creek	Brine Creek
Browns Creek	Bullberry Creek	Bull Creek
Bullfrog Creek	Bullfrog Creek North Fork	Burr Creek
Burro Creek	California Gulch Creek	Carcass Creek
Cass Creek	Cedar Creek	Coal Mine Wash
Coaly Wash Stream	Copper Creek	Copper Springs Creek
Cottonwood Creek	Cottonwood Wash	Cow Creek
Crescent Creek	Dark Canyon Creek	Daves Fork
Deep Creek	Deer Creek (Mitchell Creek)	Dirty Devil River
Divide Canyon Creek	Dry Canyon Creek	Dry Creek
Dugout Creek	Fish Creek	Fremont River
Government Creek	Granite Creek	Greenwich Creek

Halls Creek	Hansen Creek	Happy Canyon
Hells Kitchen Canyon Creek	Hogg Canyon Creek	Holt Draw
Hoodle Creek	Ivie Creek	Larrys Fork
Left Hand Fork Ax Handle Creek	Little Table Creek	Lost Creek
Maidenwater Creek	Manning Creek	Maple Canyon Creek
Maple Creek	Milk Creek	Mill Creek
Mt. Ellen North Fork Creek	Mt. Ellen South Fork	Mud Creek
Muddy Creek	Muley Creek	North Wash
North Wash South Fork	Oak Creek	Oak Spring Creek
Otter Creek	Pennell Creek	Peterson Creek
Petes Canyon Creek	Pine Creek	Pistol Creek North Fork
Pistol Creek South Fork	Pleasant Creek	Poison Creek
Poison Spring	Pole Canyon Creek	Praetor Canyon Creek
Quaking Aspen Creek	Quitchupah Creek	Quitchupah Creek North Fork
Raggy Canyon Creek	Reese Creek	Riley Canyon Creek
Road Creek	Robber's Roost Canyon	Saleratus Creek
Salt Wash	Sand Creek	Sandy Creek
San Pitch River	Sevier River	Sevier River East Fork
Skumtumpah Creek	Slate Creek	South Creek
South Willow Creek	Speck Creek	Spring Branch
Spring Creek North Fork	Starr Creek	Straight Creek
Sulphur Creek	Sulphur Creek Tr. Pleasant	Sweetwater Creek
Swett Creek	Swift Spring Creek	Tenmile Creek
Thompson Creek	Threemile Creek	Ticaboo Creek
Timber Canyon Creek	Trachyte Creek	Twin Corral Box Canyon
Water Creek	Water Hollow Creek	Wild Horse Creek
Willow Patch Creek	Willow Spring Creek (Forest Creek)	Yogo Creek

The majority of the streams in the RFO, whether perennial or intermittent, originate at higher elevations on National Forest or BLM lands and flow through private and BLM-administered lands. Many of these streams are characterized by steep streambed gradients and are subject to flooding during rapid snowmelt or high-intensity thunderstorms. As the perennial streams run through public lands, they provide water for livestock, wildlife, fisheries, and downstream irrigation.

Some intermittent and ephemeral streams in the area yield water during periods of spring snowmelt or intense thunderstorm activity. However, much of the water in most of these streams is used for irrigation and does not reach the major rivers.

The Sevier River and its tributaries are regulated by storage reservoirs. Because of this, the Utah State Engineer must approve changes to any water regime. A considerable amount of water from the snowmelt period is stored and then released from July to September. Lakes and reservoir storage facilities are an

important part of the water resource scheme. Major reservoirs in the area include Otter Creek, Koosharem, Piute, Willow Creek, Gunnison, and Sevier Bridge Reservoirs.

Springs, seeps, and wells in the area provide high-quality water for domestic and livestock use.

3.3.3.1 Water Quality

Baseline surface water quality within the planning area is influenced by the geology and soil with which the water has been in contact. Water quality also varies depending on flow conditions. Human-induced impacts in the planning area, such as changes in thermal and turbidity conditions in water bodies and impacts from increased salinity, heavy metals, and nutrients from irrigation or other discharges also affect baseline water quality. Surface water quality impacts within the planning area may be associated with agricultural runoff, road maintenance, removing riparian vegetation, channel modification, stream bank destabilization, atmospheric deposition, resource extraction, oil and gas activities, urban runoff, and grazing activities.

Table 3-2 lists the impaired stream and river segments located within the RFO, listed on Utah's 2006 303(d) list of impaired waters (Appendix 4). Table 3-3 lists the lakes and reservoirs located within the planning area needing total maximum daily load (TMDL) analysis. TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources. The State sets water quality standards. The State identifies the uses for each water body, for example, drinking water supply, contact recreation (swimming), and aquatic life support (fishing), and the scientific criteria to support that use. A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and non-point sources. The calculation must include a margin of safety to ensure that the water body can be used for the purposes that the State has designated. The calculation must also account for seasonal variation in water quality. The Clean Water Act (CWA), Section 303, establishes the water quality standards and TMDL programs.

Table 3-2. Utah's 2004 303(d) List of Impaired Stream and River Segments Requiring a TMDL Analysis

Water Body Name	Water Body Description	Causes
East Fork Sevier River	East Fork Sevier River and tributaries from confluence with Sevier River upstream to Antimony Creek confluence, excluding Otter Creek and tributaries	Temperature Total phosphorus
Lost Creek	Lost Creek and tributaries from confluence with Sevier River upstream about 6 miles	Total Dissolved Solids (TDS)
Sevier River	Sevier River from Clear Creek confluence to HUC unit boundary	Temperature
Peterson Creek	Peterson Creek and tributaries from confluence with Sevier River to USFS boundary	TDS
Lower Ivie Creek	Ivie Creek and tributaries from confluence with Muddy Creek to U-10 highway	TDS
San Pitch River	San Pitch River and tributaries from beneficial U132 to Pleasant Creek confluence excluding Cedar Creek, Oak Creek, Pleasant Creek, and Cottonwood Creek	Temperature
Lower Muddy Creek	Muddy Creek from confluence with Fremont River to Ivie Creek confluence	Selenium

Table 3-3. Lakes and Reservoirs within Planning Area Identified as Needing TMDL Analysis

Water Body Name	Water Body ID	Pollutant
Piute Reservoir	UT-L-16030001-011	Total phosphorus
Nine Mile Reservoir	UT-L-16030004-001	Total phosphorus Dissolved oxygen
Otter Creek Reservoir	UT-L-16030002-004	Total phosphorus
Koosharem Reservoir	UT-L-16030002-011	Total phosphorus

Source: UDEQ 2006

As surface water quality decreases, the ability of aquatic animals and plants to maintain themselves diminishes. Stressors associated with increasing temperatures, lower dissolved oxygen levels, changing pH, and smothering from sediments adversely affect the aquatic ecosystem and diminish the ability of surface waters to sustain baseline conditions.

3.3.3.2 Drinking Water

Several municipal water sources and associated watersheds originate on public lands. BLM coordinates with local communities to protect and allow appropriate development of municipal water resources. Table 3-4 lists the culinary water sources located on public lands within the planning area.

Table 3-4. Culinary Water Sources on Public Lands

Name of Water User	Location and Source
William Murray	T. 27 S., R. 3 W., Section 7—Spring
Town of Kingston	T. 30 S., R. 3 W., Section 24—Spring
Utah Division of Water Resources (Town of Greenwich)	T. 27 S., R. 1 W., Section 35—Spring
Town of Annabella	T. 24 S., R. 2 W., Section 19—Spring
Utah Division of Water Resources (Town of Lyman)	T. 27 S., R. 3 E., Section 35—Spring T. 28 S., R. 3 E., Sections 3 and 4—Spring
Town of Bicknell	T. 28 S., R. 3 E., Section 25—Spring T. 29 S., R. 3 E., Section 3—Spring
Town of Loa	T. 28 S., R. 2 E., Section 3—Spring and Well
Town of Sigurd	T. 23 S., R. 1 W., Section 6, 21, and 28—Springs
Kings Meadow Ranches	T. 23 S., R. 1 W., Section 28—Spring
City of Aurora	T. 22 S., R. 2 W., Sections 1 and 6—Springs
Caineville Special Service District	T. 28 S., R. 8 E., Section 33—Well
Town of Koosharem	T. 26 S., R. 1 E., Section 30—Spring
Town of Hanksville	T. 29 S., R. 11 E., Section 1—Well
Town of Antimony	T. 31 S., R. 2 W., Section 19—Spring
Utah Department of Transportation (UDOT) U-24 Rest Stop	T. 26 S., R. 1 E., Section 29—Spring

3.3.3.3 Groundwater

Groundwater recharge primarily originates as precipitation in the mountain areas surrounding the planning area where geologic formations outcrop or where water resources were deposited during past geologic periods. Groundwater quality is highly variable and dependent on the formations where the aquifers are located. Groundwater contamination is a concern. Fresh water in the Navajo Formation is contaminated with high levels of TDS adjacent to Muddy Creek.

3.3.4 Vegetation

Vegetation communities provide the foundation for many resources and resource uses on public lands. Plant communities provide habitat for wildlife, provide forage for livestock, influence recreation use, and are components of scenic quality. Healthy vegetation communities stabilize soils, increase infiltration of precipitation, slow runoff, reduce erosion, and enhance visual quality.

Soil, climate, topography, and disturbance influence patterns of vegetation structure and species composition. Disturbances (such as fire) influence the structure and species composition of vegetation communities. Increases in the interval between fire disturbances in nearly all vegetation communities have resulted in increased vegetation density and change in vegetation structure and species composition.

The vegetation community and association descriptions that follow refer to the combination of plants forming natural vegetation in an area. These descriptions combine Utah Land Cover Geographical Analysis Program (GAP) data into 3 broad categories: desert shrub, sagebrush steppe, or forest and woodlands (USGS 2004). Each category contains one or more vegetation community or association, as illustrated in Map 3-3, Vegetation Cover Types. The vegetation associations are defined by the dominant plant species of either the tree or shrub vegetation layer (Jennings *et al.* 2004). The primary vegetation associations within the lands managed by the RFO are desert shrub, pinyon-juniper woodlands, sagebrush steppe, ponderosa pine, mixed-conifer, oak, mountain shrub, aspen, and nonvegetated. Table 3-5 lists the acreage and percentage of each vegetation association in the RFO.

Table 3-5. Vegetation Communities and Associations

Vegetation Community and Association	Richfield Field Office	
	Acres	Percentage
Desert shrub	1,051,000	49%
Pinyon-juniper woodlands	552,000	26%
Sagebrush steppe	337,000	16%
Ponderosa pine	43,000	2%
Mixed-conifer	29,000	1%
Oak	20,000	1%
Mountain shrub	16,000	1%
Aspen	12,000	<1%
Nonvegetated	67,000	3%
Total	**2,127,000**	**100%**

Source: USGS 2004

3.3.4.1 Desert Shrub

Desert shrub includes the salt shrubs: shadscale, greasewood, blackbrush, and desert grassland vegetation cover types (see Table 3-6). Desert shrub vegetation comprises nearly half of the RFO (1,051,000 acres), including much of the lower elevation public land mostly east of Capitol Reef National Park. This is the largest vegetation community in the RFO. Located primarily on the valley floors, this vegetation community is most common on well-drained, sandy to rocky soils. It can, however, tolerate saline and alkaline soils. Plants within this community are adapted to a wide temperature range, and many are

capable of photosynthesis at temperatures as low as 11°F (Simonin 2001). Precipitation in these areas ranges from 6 to 14 inches annually but is mostly from 8 to 12 inches per year. Table 3-6 lists species prevalent in this vegetation community.

Wildlife and livestock use of desert shrub vegetation varies depending on the species present. Fourwing saltbush is very palatable and provides high-quality forage for wildlife and livestock even during drought conditions (Kindschy 1996). Black greasewood is a valuable browse for livestock and wildlife, particularly during fall and winter; however, when consumed in large quantities, the soluble oxalates that black greasewood contains are poisonous to livestock (Anderson 2004). The forage value for blackbrush is principally as browse for bighorn sheep. Domestic sheep and goats, and to a lesser extent cattle, also browse blackbrush. During the winter in southwestern Utah, blackbrush provides fair forage for domestic sheep and cattle (Anderson 2001). Desert shrub areas provide browse and shelter for small mammals, and fourwing saltbush provides a source of water for black-tailed jackrabbits.

Table 3-6. Typical Desert Shrub Plant Species

Life form	Common Name	Scientific Name
Shrubs	Shadscale	Artiplex confertifolia
	Winterfat	Krascheninnikovia lanata
	Saltcedar	Tamarix chinensis
	Rabbitbrush species	Chrysothamnus spp.
	Hopsage	Grayia spinosa
	Mormon Tea	Ephedra spp.
	Blackbrush	Coleogyne ramosissima
	Black Greasewood	Sarcobatus vermiculatus
	Fourwing Saltbush	Artiplex canescens
Grasses	Indian Ricegrass	Achnatherum hymenoides
	Galleta	Hilaria jamesii
	Alkali Sacaton	Sporobolus airoides
	Saltgrass	Distichlis spicata
	Purple Threeawn	Aristida purpurea
	Blue Grama	Bouteloua gracilis
	Sand Dropseed	Sporobolus cryptandrus
	Cheatgrass	Bromus tectorum
Forbs	Broom Groundsel	Senecio spartioides
	Hairy Daisy	Erigeron incertus
	Longleaf Phlox	Phlox longifolia
	Scarlet Globemallow	Sphaeralcea coccinea

Source: USFS 2004 and Welsh et al. 2003.

3.3.4.2 Sagebrush Steppe

Widely distributed in the Colorado River Basin and Great Basin, the sagebrush-steppe vegetation community is primarily found in the western portion of the RFO. Sixteen percent (337,000 acres) of the RFO is considered sagebrush steppe. Sagebrush steppe communities generally occur on the drier portions of pinyon-juniper woodlands and mesic portions of the desert shrub community. Precipitation in these areas averages 8–15 inches per year, and soils are dry, with a thin organic horizon. Forbs with shallow root systems are favored in wetter years, whereas deeply rooted shrubs have the competitive advantage during droughts and survive by tapping deeply infiltrated moisture (West 2000). Sagebrush species include big sagebrush, Wyoming big sagebrush, and basin sagebrush. Table 3-7 lists species in the sagebrush steppe vegetation community. Sagebrush steppe communities in Utah have declined because of drought, changes in disturbance regimes, and the invasion of cheatgrass and other invasive plant species. A recent sagebrush die-off in Utah affected approximately 600,000 acres of sagebrush habitat below 7,000 feet, primarily on public lands. The die-off was attributed to stress on the plants caused by an extended drought. In addition, most of the sagebrush in the RFO are mature plants, with little new growth being found.

About 100 bird species and 70 mammal species are found in sagebrush steppe communities. These species can be grouped into sagebrush obligates (e.g., sage-grouse, sage thrasher, sage sparrow, Brewer's sparrow, pygmy rabbit, sagebrush vole, sagebrush lizard, and pronghorn); shrubland species (e.g., green-tailed towhee, black-throated sparrow, and lark sparrow); and shrubland-grassland species (e.g., Swainson's hawk, ferruginous hawk, prairie falcon, sharp-tailed grouse, and loggerhead shrike).

Table 3-7. Typical Sagebrush Steppe Plant Species

Life form	Common Name	Scientific Name
Shrubs	Rabbitbrush species	Chrysothamnus spp.
	Broom Snakeweed	Gutierrezia sarothrae
	Shadscale	Artiplex confertifolia
	Antelope Bitterbrush	Purshia tridentata
	Fringed Sagebrush	Artemisia frigida
	Wyoming Sagebrush	Artemisia tridentata wyomingensis
	Basin Big Sagebrush	Artemisia tridentata vaseyana
	Fourwing Saltbush	Artiplex canescens
Grass	Indian Ricegrass	Achnatherum hymenoides
	Bluebunch Wheatgrass	Pseudoroegneria spicata
	Crested Wheatgrass (non-native)	Agropyron cristatum)
	Desert Needlegrass	Achnatherum speciosum
	Basin Wildrye	Leymus cinereus
	Poa species	Poa spp.
	Salina Wildrye	Leymus salinus
	Slender Wheatgrass	Elymus trachycaulus
	Cheatgrass	Bromus tectorum
Forbs	Yarrow	Achillea millefolium

Life form	Common Name	Scientific Name
	Arrowleaf Balsamroot	Balsamorhiza sagittata
	Scarlet Globemallow	Sphaeralcea coccinea
	Desert Phlox	Phlox tenuifolia
	Pricklypear Cactus	Opuntia spp.
	Fleabane species	Erigeron spp.
Mosses and Lichens	Awnless Spikemoss	Selaginella mutica

Source: USFS 2004 and Welsh et al. 2003.

3.3.4.3 Forests and Woodlands

Forest and woodland vegetation is generally restricted to areas where soil moisture is adequate to establish seedlings or where the disturbance regime has changed. Adequate soil moisture is usually found at higher elevations and in riparian areas. Forest species usually dominate areas above 7,000 feet. Pinyon-juniper woodlands dominate lower elevations with adequate soil moisture. Typical forest and woodland types found within the RFO are ponderosa pine (*Pinus ponderosa*), aspen (*Populus spp.*), mixed-conifer, and pinyon-juniper woodlands. Forested areas above 10,000 feet elevation are usually a mix of several conifer species. At the lower elevations, forest types vary from pure juniper to a mix of woodland species and ponderosa pine. Table 3-8 lists species commonly found in forest and woodland areas.

Table 3-8. Typical Forest and Woodland Species

Life form	Common Name	Scientific Name
Trees	Utah Juniper	Juniperus osteosperma
	Rocky Mountain Juniper	Juniperus scopulorum
	Pinyon Pine	Pinus edulis
	Singleleaf Pinyon	Pinus monophylla
	Ponderosa Pine	Pinus ponderosa
	Bristlecone Pine	Pinus longaeva
	Engelmann Spruce	Picea engelmannii
	Subalpine Fir	Abies lasiocarpa
	White Fir	Abies concolor
	Douglas Fir	Psuedotsuga menziesii
	Aspen	Populus tremuloides
	Curleaf Mountain-Mahogany	Cercocarpus ledifolius
Shrubs	Greenleaf Manzanita	Arctostaphylos patula
	Black Sagebrush	Artemisia nova
	Gambel Oak	Quercus gambelii
	Mountain Snowberry	Symphoricarpus oreophilus
	Serviceberry species	Amelanchier spp.
	Chokecherry	Prunus virginiana

Life form	Common Name	Scientific Name
	Oregon Grape	Berberis repens
	Wood's Rose	Rosa woodsii
	Myrtle Pachistima	Pachistima myrsinites
	Redberry Elder	Sambucus racemosa
	Gooseberry species	Ribes spp.
	Mountain Muhly	Muhlenbergia montana
Grasses	Idaho Fescue	Festuca idahoensis
	Sheep Fescue	Festuca ovina
	Mutton Grass	Poa fendleriana
	Blue Grama	Bouteloua gracilis
Forbs	Littleleaf Pussytoes	Antennaria parviflora
	Heartleaf Arnica	Arnica cordifolia
	Indian Paintbrush species	Castilleja spp.
	Lupine species	Lupinus spp.

Source: USFS 2004 and Welsh et al. 2003.

Pinyon-Juniper

Pinyon-juniper woodlands occupy the driest woodland sites in Utah and provide important resources for people, wildlife, and plants. Pinyon-juniper woodland communities cover 552,000 acres—about one-quarter of the RFO. Pinyon-juniper stands grow on foothills, low mountains, mesas, and plateaus ranging from 3,000 to 8,000 feet in elevation, depending on precipitation and soil conditions. The upper limits of the pinyon-juniper woodland community in Utah are 6,500 feet on north-facing slopes and 8,400 feet on south-facing slopes. Plant species present in these areas vary widely (Evans 1988). Typically, juniper dominates at lower elevations and pinyon dominates at higher elevations (Anderson 2002, Zlatnik 1999). Pinyon-juniper woodlands provide little forage for livestock and big game.

Pinyon-juniper woodlands are increasing in the western United States as they replace other vegetation communities. Juniper is expanding into open meadows, grasslands, sagebrush steppe communities, quaking aspen groves, riparian communities, and forest lands. Increases in canopy cover results in significant amounts of bare ground, litter, and desert pavement at the soil surface (USGS 2004). On lower edges of the woodland zone, Utah juniper is frequently the only tree species. Utah juniper is more adapted to dry conditions than pinyon, with junipers often serving as nurse trees for pinyons in well-developed forests. The undergrowth is variable and dependent upon canopy closure, soil texture, elevation, and aspect (Welsh *et al.* 2003). In healthy pinyon and juniper communities, height ranges from 15 to 30 feet. Health and relative density of pinyon and juniper vary widely within the RFO; however, canopy densities over 50 percent occur over large areas. Pinyon pine and Utah juniper vigorously compete with other plants for available soil water. They crowd out grasses and shrubs that usually are present as understory vegetation. The lack of protective vegetative cover in pinyon and juniper stands leaves the soil surface particularly susceptible to erosion.

The replacement of shrub steppe communities with juniper woodland is attributed to the reduced role of fire caused by the reduction of the fine fuels through livestock grazing (Miller and Rose 1995). A combination of climatic changes, fire suppression, and the removal of understory vegetation has facilitated this expansion of pinyon-juniper woodlands.

Ponderosa Pine

Ponderosa pine forest types within the RFO (Map 3-3) are found primarily in the Henry Mountains and bordering USFS lands in the western portion of the RFO. Ponderosa pine can be either a climax or a seral species. It is a climax species at the lower limits of the coniferous forests and a seral species in higher elevation mixed-conifer forests. Ponderosa pine is considered shade intolerant and tends to grow in even-aged stands; however, in the drier limits of its range, such as the Henry Mountains, uneven-aged stands appear common. In reality, these apparently uneven-aged ponderosa pine stands are a mosaic of small even-aged groups. Ponderosa pines lose vigor in dense stands (Burns and Honkala 1990).

Fires have had a profound effect on the distribution of ponderosa pine. Although the seedlings are readily killed by fire, larger trees possess thick bark that offers effective protection from fire damage. Competing tree species, such as Douglas fir, are considerably less fire tolerant, especially in the sapling and pole size classes. Because of successful fire control during the past 50 years, many of these stands have developed understories of Douglas fir and true firs. Type conversion has been accelerated by harvest of the ponderosa pine, leaving residual stands composed of true fir, Douglas fir, or lodgepole pine (Burns and Honkala 1990).

Quaking Aspen

Quaking aspen is found on relatively moist sites between 7,500 and 10,500 feet in mountainous areas within the planning area. It also grows at lower elevations in riparian communities and at other sites with deep soil and adequate soil moisture. In very high exposed places, aspen becomes stunted, with the stem bent or almost prostrate from snow and wind. At its lower elevation limit, it is a scrubby tree growing along creeks (Burns and Honkala 1990). Aspen trees grow together in clones or in groups of stems that share the same root system and genetic makeup. Quaking aspen seedlings at 1 year of age are capable of reproducing by root sprouts (suckers), and mature stands reproduce vigorously by this means. Root collar sprouts and stump sprouts are produced only occasionally by mature trees, but saplings commonly produce them (Burns and Honkala 1990). Aspen clones may regenerate readily after clearcutting or burning by producing numerous root sprouts. Root damage during logging can reduce sprouting. Clearcutting of a mixed aspen-conifer stand may lead to replacement with pure aspen stands, depending on location. This forest type is very important for landscape diversity, aesthetics, and wildlife habitat.

The fast-growing quaking aspen tree is short–lived, and pure stands are gradually replaced by slower growing species. Areas once dominated by aspen in the State of Utah have decreased by 60 percent since the late 1800s (Shepperd *et al.* 2001). The diversity and abundance of understory plants in an aspen stand can be 10 times that found in coniferous forest types. In addition, aspen forests yield more water than conifer types in similar environments.

Spruce-Fir

Spruce-fir forest types within the planning area occur at the highest elevations, usually above 10,000 feet. These forest types include Douglas fir, subalpine fir, and Englemann spruce. Spruce-fir forests can be very complex in structure and age distribution. Their species are shade tolerant and generally not considered resistant to fire. Fires are infrequent but important in dry years, and windthrow is a prime disturbance factor.

3.3.4.4 Riparian Resources

The BLM's 1987 policy statement on riparian area management defines a riparian area as "an area of land that is directly influenced by permanent water. It has visible vegetation or physical characteristics reflective of permanent water influence. Lake shores and stream banks are typical riparian areas. Excluded are such sites as ephemeral streams or washes that do not exhibit the presence of vegetation

dependent upon free water in the soil." A riparian area identified as lentic is usually a meadow/spring riparian area whereas a riparian area identified as lotic has running water such as a creek or river.

Riparian areas cover less than 1 percent of the planning area. The most extensive areas of riparian vegetation on public land are those found along the Dirty Devil River and the Fremont River east of Capitol Reef National Park. The ecological significance of riparian areas far exceeds their limited physical area. They are located along streams and rivers or lands with a water table that is capable of influencing soils and vegetation. They are major contributors to ecosystem productivity and structural and biological diversity, and they provide important habitat for fish, birds, and other wildlife species. Riparian areas affect the quantity and quality of water onsite and downstream, and help store floodwaters, recharge groundwater, reduce the risk of flash floods, and filter sediments.

The objective of the Utah BLM Riparian Policy is to improve or maintain riparian areas in proper functioning condition (PFC). Regardless of the type of riparian or wetland ecosystem, functioning condition is assessed for each stream or varying segments. Functioning condition is rated by category to reflect ecosystem health as affected by management practices. Riparian areas are classified as in PFC when there is adequate vegetation and landform structure present to dissipate stream energy from high flows. This results in a reduction in erosion, improvement in water quality, filtration of sediment, capturing of bedload, and an aid in floodplain development. Properly functioning riparian areas also improve flood water retention and ground water recharge, promote development of root masses that stabilize stream banks against cutting action, promote development of diverse ponding and channel characteristics necessary for fish production and other uses, and support greater biodiversity.

"Functioning at Risk" riparian areas are in functional condition, but at least one soil, water, or vegetation attribute makes them susceptible to degradation following high flow events. Management practices that can make them "At Risk" include livestock grazing, the presence of roads, off-highway vehicle (OHV) activities, and commercial recreation and development.

"Non-Functioning" riparian areas are clearly not providing adequate vegetation, landform, or large wood debris to dissipate stream energy associated with high flows, and thus are not reducing erosion, improving water quality, etc.

BLM has inventoried riparian areas throughout the RFO. About 455 miles of lotic riparian habitat and 1,423 acres of lentic riparian habitat have been inventoried on public lands in the RFO. The BLM has completed a condition assessment of all inventoried riparian areas in allotments. All riparian areas in allotments were inventoried in the early 1990s. More recently, under the *Utah Standards and Guidelines for Rangeland Health,* the BLM expanded the definition for riparian areas to include seeps and springs. To date, approximately 59 percent of riparian areas under the more comprehensive definition have been inventoried. Estimates of functional conditions of these riparian areas are displayed in Table 3-9. It should be noted that this does not represent a comprehensive total of riparian habitats within the RFO because not all have been surveyed. Utah's *Standards for Rangeland Health* (BLM 1997) establish PFC as the minimum standard for BLM management of riparian areas.

Table 3-9. Riparian Conditions Inventory

		Proper Functioning Condition	Functioning-At-Risk				Non-Functional	Total
			Trend Up	Trend Not Apparent	Trend Down	Total		
Lotic Riparian	Miles	305 mi	30 mi	61 mi	11 mi	102 mi	48 mi	455 mi

		Proper Functioning Condition	Functioning-At-Risk				Non-Functional	Total
			Trend Up	Trend Not Apparent	Trend Down	Total		
	% surveyed	67%	7%	13%	2%	22%	11%	
Lentic Riparian	Acres	1,236 ac	16 ac	137 ac	10 ac	163 ac	24 ac	1,423 ac
	% surveyed	87%	1%	10%	1%	11%	2%	

*Source: Riparian Inventories, Richfield Field Office, 2008

Riparian areas are dynamic and, compared with upland habitats, extremely responsive to changes. Variations in seasonal water flows influence the productivity and density of riparian vegetation and channel development. Flooding is an essential part of system development and stability. Minor changes are normal and are part of the resilience of the riparian ecosystem. A system's ability to withstand major disturbances depends on the integrity and balance of stream bank, hydrology, and vegetation components. Degraded conditions in any of those components can result in impacts that may be beyond the riparian area's capacity to withstand or repair following disturbance. The combined effects of small-scale, repeated degradation without recovery cause incremental declines in functional condition and increase vulnerability to further degradation. It is BLM policy to maintain, restore, or improve riparian ecosystems to achieve a healthy and properly functioning condition that ensures biological diversity, productivity, and sustainability.

Riparian areas depend on a balanced combination of physical (stream bank, channel, and soil characteristics), hydrologic (regular occurrence of surface water), and vegetation (hydrophytic communities) components. When any of these 3 components—soils, water, or vegetation—are adversely affected, the functional capacity of a riparian habitat may degrade. Riparian-wetland areas are properly functioning when adequate vegetation, landform, or large woody debris is present to dissipate stream energy associated with high water flows and flooding, thereby reducing erosion and improving water quality. Deep soil-binding root masses stabilize stream banks against erosion.

3.3.4.5 Invasive, Non-native Species

The BLM defines a weed as "a plant that interferes with management objectives for a given area of land at a given point in time" (BLM 2007b). Noxious weeds are designated by federal or state law as generally possessing one or more of the following characteristics: aggressive and difficult to manage; parasitic; a carrier or host of serious insects or disease; or non-native, new, or not common to the United States. Noxious weeds are defined in Utah's *Standards for Rangeland Health and Guidelines for Livestock Grazing* (BLM 1997) as non-native plants that are especially undesirable because they have no forage value and are sometimes toxic, or are capable of invading plant communities and displacing native species. The BLM recognizes noxious weed invasions as one of the greatest threats to the health of rangelands nationwide.

Invasive species include plants able to establish on a site where they were not present in the original plant composition. Invasive species aggressively out-compete native species within a community and often alter the physical and biotic components enough to affect the entire ecological community. Invasive species are of particular concern following a disturbance. They are often exotic species that do not have naturally occurring, local predators.

Although the invasive weed species occur throughout the RFO, most infestations are small and sparsely scattered through Sevier, Piute, Garfield, and Wayne counties. The areas with the highest noxious weed

concentration occur in the Sanpete County portion of the planning area. Due to weed treatments over the past 25 years, infestations are small and localized; and they are treated as soon as they are identified. Cheatgrass is located throughout the planning area and is generally most prevalent below 8,000 feet. There are several small areas of cheatgrass monoculture throughout the planning area, generally in areas post wildfire, or post grasshopper invasion. Additionally, some areas have higher concentrations of cheatgrass due to historic vegetative disturbance.

The Utah Noxious Weed Act defines a noxious weed as any plant that is determined by the Commissioner of Agriculture to be especially injurious to public health, crops, livestock, land, or other property. There are 19 species which have been designated as state noxious weeds, and 15 have been additionally classified as new and invading weeds that have the potential to become noxious weeds. The state noxious weed list is presented in Table 3-10.

Table 3-10. Utah Noxious Weeds

Common Name	Scientific Name
Bermudagrass	Cynodon dactylon
Bindweed (Wild Morning Glory) *	Convolvulus arvensis
Canada Thistle *	Cirsium arvense
Diffuse Knapweed *	Centaurea diffusa
Dyers Woad	Isatis tinctoria
Perennial Sorghum species including Johnsongrass (Perennial sorghum) *	Sorghum almum Sorghum halepense
Leafy Spurge	Euphorbia esula
Medusahead	Taeniatherum caput-medusae
Musk Thistle *	Carduus nutans
Perennial Peppergrass *	Lepidium latifolium
Purple Loosestrife	Lythrum salicaria
Quackgrass *	Agropyron repens
Russian Knapweed *	Centaurea repens
Scotch Thistle *	Onopordum acanthium
Spotted Knapweed	Centaurea maculosa
Squarrose Knapweed *	Centaurea squarrosa
Whitetop *	Cardaria draba
Yellow Star Thistle	Centaurea solstitialis

Note: Species marked with an asterisk (*) occur within the RFO. The remaining species have been identified on adjacent private, state, or USFS lands.
Source: Utah Department of Agriculture and Food 2003b.

In addition to the list generated by the State of Utah, each county weed control board has the authority to develop its own list. Table 3-11 lists weeds designated as noxious in any of the 5 counties within the planning area.

Table 3-11. County Noxious Weeds 2003

Common Name	Scientific Name	County Listed
Black Henbane	Hyoscyamus niger	Sanpete
Houndstongue	Cynoglossum officinale	Sanpete
Velvet Leaf	Abutilon theophrasti	Sanpete
Russian Olive	Elaeagnus angustifolia	Sevier, Wayne

Source: Utah Department of Agriculture and Food 2003b.

Utah BLM has designated several other invasive plants as new and invading weeds. These plants, although not listed by the State or any of the 5 counties, are identified based on their potential to invade and possibly alter plant communities in the RFO. Table 3-12 identifies these species.

Table 3-12. Utah BLM New and Invading Weeds

Common Name	Scientific Name
Black Henbane	Hyoscyamus niger
Camel Thorn	Alhagi camelorum
Dalmatian Toadflax	Linaria dalmatica
Goatsrue	Galega officinalis
Jointed Goatgrass	Aegilops cylindrica
Poison Hemlock	Conium maculatum
Purple Starthistle	Centaurea calcitrapa
Silverleaf Nightshade	Solanum elaeagnifolium
St. John's Wort	Hypericum perforatum
Velvetleaf	Abutilon theophrasti
Water Hemlock	Cicuta douglasii (C. maculata)
Wild Proso Millet	Panicum miliaceum
Yellow Nutsedge	Cyperus esculentus
Yellow Toadflax	Linaria vulgaris

Source: BLM 2004b.

Finally, the RFO has identified 4 invasive species in addition to the state, county, and Utah BLM plants. These additional species, which are known to cause problems within the local plant communities in the RFO, are:

- Puncture vine, which is also known as Goat's head (*Tribulus terristris*)
- Salt cedar, which is commonly referred to as tamarisk (*Tamarix chinensis* or *T. ramosissima*)
- Small flowered tamarisk (*Tamarix parviflora*)
- Buffalobur (Solanum rostratum).

Russian knapweed (*Centarea repens*), salt-cedar (*Tamarix chinensis*), and Russian olive (*Elaeagnus angustifolia*) are all problematic species occurring in riparian areas of the RFO. Salt-cedar channelizes rivers with its deep roots and chokes out other vegetation.

The foregoing lists are changed as new plant species become problems. It should be noted that a species' absence from the lists does not mean that the species is not considered in management decisions. For example, although large areas of uplands and rangelands are being converted to invasive annual species, including cheatgrass (*Bromus tectorum*) and Russian thistle (*Salsola tragus*), neither species is included in any of the above lists. Once cheatgrass has established on a site and gone through a couple of cycles of seed production and dispersal, the seed bank can contain 2 or 3 times as many viable cheatgrass seeds as there are established plants in the community (Zouhar 2003). Cheatgrass invasion may be accelerated by disturbance, but disturbance is not required for its establishment. Cheatgrass can also thrive in areas that have little or no history of cultivation or grazing by domestic livestock. It may establish in these relatively undisturbed areas when seed disperses from nearby patches and establishes on sites of small natural disturbances, such as where rodents or predators dig in the soil (Zouhar 2003). It has changed plant species composition in all 3 vegetation communities.

3.3.5 Cultural Resources

Overviews of known cultural resources in the RFO show a wide range of and potential for cultural resources. Cultural resource inventories have been conducted in the lands managed by the RFO for more than 30 years at varying levels using a variety of methods. Most of the inventories were conducted in accordance with Section 106 of the National Historic Preservation Act (NHPA) as part of impact mitigation from surface disturbing activities, although academic institutions have performed some research excavations. Inventories have identified several thousand cultural properties throughout the RFO, representing a wide variety of site types and chronological periods. Overall, less than 5 percent of the RFO has been inventoried.

Compared with other areas in the Southwest, site densities in inventoried areas are low throughout the RFO. Site densities increase near Capitol Reef National Park and in some of the canyons in eastern Wayne and Garfield counties. Site densities are much lower in Sevier County, with the lowest densities being found in Sanpete and Piute counties. Known cultural resources include various site types ranging in age from about 10,000 years ago through the present. The site types are listed and described below.

3.3.5.1 Site Types

Cultural resources in the RFO have been classified according to one or more site types. Site types are groupings of sites with similar physical or cultural characteristics. During original recordation, sufficient information may not have been readily available to determine the functional or cultural site type. Consequently, some sites may be recategorized after further research. Sites fitting into more than one category are usually more complex and have more information potential than do single-category sites. At the broadest level, cultural resources sites are categorized as either prehistoric or historic types.

Prehistoric Site Types

Prehistoric sites can be associated with one or more of 4 broad thematic periods: Paleo-Indian, Archaic, Formative (Fremont or Anasazi), and Late Prehistoric. There are sites within the RFO from each period, with an especially large representation of Formative sites. Some of the site types in the RFO are as follows:

- **Rock Art.** Rock art can be of two types, petroglyphs and pictographs. Petroglyphs are designs pecked or incised into the surface of the rock; pictographs are painted on the rock surface with various shades of pigment. At some sites, designs have been pecked into the rock and then painted; at other sites, images were painted, then features were created by pecking away the paint and the rock surface. Rock art has not been attributed to specific human groups with any degree of assurance, but it is believed that rock art within the RFO represents groups living from before 9000 B.C. to the present.
- **Rockshelter.** A rockshelter consists of a rock outcrop or large boulder that provides shelter from wind, sun, rain, and other elements. Rockshelters were used by both prehistoric and historic people.
- **Lithic Scatter.** A lithic scatter is any group of stone artifacts or artifact fragments. Lithic scatters are usually composed of flaked stone tools or debitage. Ground stone tools and tool fragments also fit into this category. This type ranges from sites with only a single tool present to sites with thousands of artifacts, diverse in type and function.
- **Ceramic Scatter.** A ceramic scatter is any group of ceramic artifacts or artifact fragments and can result from either prehistoric or historic activity. Most prehistoric ceramics represent the Fremont Indian culture or tradeware from the Anasazi culture to the south, but a small amount of Numic (e.g., Ute or Paiute) pottery has been recorded.

- **Cairn.** A cairn is an intentionally created pile of stones. Most cairns in the RFO are from the historic period (e.g., sheepherders' monuments, mining claim markers, etc.). However, some may be prehistoric.
- **Hearth.** A hearth is the remains of a feature where humans purposely used fire. This includes clay- or rock-lined fire pits, ash pits, ash stains, and fire-cracked rock concentrations or scatters.
- **Rock Alignment.** A rock alignment is any human arrangement of rock not usually recognized as part of a structure.
- **Cist.** Cists are small structures usually built for storage. They are slab-lined or coursed masonry, generally about 1 meter in diameter. They are usually semi-subterranean but can occur on the surface, freestanding, or attached to a cliff face or ledge.
- **Burial.** Burial sites contain human physical remains below the surface or exposed, whether marked or not.
- **Structural.** These sites are constructed from a wide range of material types and include various features within the structure. They consist of structures of brush and trees, mud and sticks, coursed masonry, and slab-lined, boulder-lined, or unlined pits occurring in open or naturally protected areas.
- **Midden.** Middens are concentrations of all or several of the following: ash, charcoal, bone, sherds, lithic fragments, human excrement, and general garbage.

Historic Site Types

Historic sites are cultural resources with a period of significance ranging from 1700 A.D. to the present. Because features such as ditches, fences, and houses cannot be understood or interpreted outside the functional complex of which they are a part, historic resources are grouped into several themes. Some of these themes are organized chronologically, although most are functionally organized.

- **Anglo Exploration:** The pre-settlement category includes historic features from the period before the settlement of the 5 counties in the planning area. Limited features of this period have been identified. There are several records of individuals and groups passing through this area along what became known as the Old Spanish Trail. Remains of their activities may possibly be found. The Old Spanish Trail was designated a National Historic Trail in late 2002.
- **Ranching:** The ranching category includes features resulting from the raising of domestic livestock, such as fences, water developments, cabins, corrals, camps, and sheepherders' monuments. There is a long history of ranching in the RFO, and the features remaining from these developments are useful historic resources.
- **Farming:** The farming category includes features resulting from raising crops; digging or drilling wells; building barns, sheds, and cisterns; using farm implements; and constructing canals, ditches, and residences.
- **Mining:** The mining category includes features resulting from exploration and extraction of mineral resources, such as shafts and adits, drill sites, prospect holes, tailing dumps and waste rock piles, ore bins, loading chutes, kilns, tramways, residences, and other buildings.
- **Transportation:** The transportation category includes features resulting from attempts to transport people or goods across the RFO, such as abandoned rail lines, railroad grades, construction camps, bridges, roads, trails, and possible remains of river navigation.
- **Government Management:** The government management category includes features resulting from government attempts to manage the land and its resources. Many of these features are the result of Civilian Conservation Corps (CCC) activities through the 1930s. They include dams, fences, land treatments or manipulations, spring developments, roads, and bridges.

3.3.5.2 National Register of Historic Places

There are 3 sites within the lands managed by the RFO which have been formally listed on the National Register of Historic Places (NRHP). They are:

- **Cowboy Caves.** This site consists of two adjacent caves: Cowboy Cave and Walters Cave. Together they make up one of the richest archaic sites on the Colorado Plateau and outline almost 5,000 years of intermittent human habitation in the area.
- **Bull Creek Archaeological District.** This area of roughly 1,900 acres contains 104 identified significant archaeological sites, including habitations, storage structures, camps, and quarries. These sites represent a 400-year occupation (A.D. 800–A.D. 1200) of the area by peoples from the Formative period.
- **Starr Ranch.** The stone cabin here is a remnant of a 1890s stock-raising boom, when large cattle herds were introduced in the Henry Mountains. Starr Ranch is situated on the south slopes of Mount Hillers, and its stone buildings are still standing.

Many other sites throughout the RFO meet the eligibility criteria for NHRP listing. Current laws protect sites that are listed on the NHRP and those that are eligible for such a listing.

3.3.5.3 Cultural History Overview

Cultural resources in the RFO are categorized into two major time periods separated by the presence of European influence in the region. Prehistoric sites can be associated with one or more of 4 broad cultural periods that are distinguished based on differences in material culture traits or artifacts and subsistence patterns. Prehistoric sites can be associated with one or more of 4 broad thematic periods: Paleo-Indian (before 5500 B.C.), Archaic (5500 B.C. to 700 A.D.), Formative (700 A.D. to 1300 A.D.), and Late Prehistoric (1300 A.D. to ca. 1776 A.D.).

Paleo-Indian (Before 5500 B.C.)

There is no firm date for the earliest human use of the lands managed by the RFO; however, there is evidence of human use about 12,000 years ago. Chronologically, Paleo-Indians were contemporaries with extinct megafauna, and evidence outside the planning area shows the early human dependency on these animals (Spangler 2001). No sites that can definitely be assigned to this period have been found in the planning area, although many Paleo-Indian projectile points have been found throughout the Henry Mountains. Based on the period artifacts found throughout the area, it is safe to assume that Paleo-Indians did use the Henry Mountains; therefore, a potential for future discovery remains. Because of the rare nature of these resources, any discovery of Paleo-Indian sites would be significant.

Archaic (5500 B.C. to A.D. 700)

The Archaic tradition may be defined as a generalized hunter-gatherer adaptive strategy, with peoples employing “common adaptive strategies to exploit a variety of desert environments” (Spangler 2001). The warmer, dryer environment following the Paleo-Indian period resulted in a change from the big-game subsistence pattern of the Paleo-Indian to a small game hunting, seed, and nut-gathering subsistence pattern. It is thought that Archaic peoples “followed an annual round in response to changing resource availability, living in small, kin-related groups throughout most of the year” (Tipps 1988). These highly adaptive groups could easily move from where resources were depleted to where resources were abundant, roving from location to location, with their diet focusing on a new staple food source at each different location. Toward the end of the Archaic period, the hunter-gatherer tradition was gradually incorporated into supplemental agricultural subsistence. Evidence of agriculture exists in southern and southeastern Utah, dated to early Anasazi cultures around 1000 B.C. (Craig Harmon, BLM RFO, Personal

communication 2003). Archaic sites are common in the RFO. A few places in the area that were inhospitable to later Formative occupation seemed to favor earlier Archaic use.

Because these Archaic sociopolitical groups were small, the few seasonal cave and overhang dwellings thus far discovered are estimated to represent only a portion of the sites used. Potential for further Archaic site discoveries remains throughout the RFO.

Formative (A.D. 700 to A.D. 1300)

The Formative Period saw the continued growth of the Anasazi or ancestral Puebloan cultures in addition to the Fremont culture. Evidence of the Anasazi is limited to areas east of Capitol Reef National Park, and it does not extend much farther north than the Henry Mountains area. Archaeological evidence of the Fremont people is generally found north of the Puebloan areas throughout much of central and eastern Utah (Craig Harmon, BLM RFO, Personal communication 2003). Archaeological evidence from north of the Henry Mountains area contains evidence of the Fremont and Puebloan cultures.

Formative cultures led a more sedentary life than did their Archaic predecessors. Consequently, Formative cultures resulted in more permanent settlements. The Formative Fremont are "archaeologically characterized by the use of ceramics and the bow and arrow, habitation of deep pithouses in small riverine settlements, and a metate with a shelf, termed the Utah metate" (Miller 2002). Much of the rock art in the RFO is attributed to Formative cultures, although rock art from Archaic and Numic cultures also has been noted. Most sites in the RFO identified as belonging to a specific cultural group are either wholly from or contain components of Formative cultures.

Late Prehistoric (A.D. 1300 to ca. 1776)

Following the seemingly abrupt decline and disappearance of the Fremont culture around A.D. 1300, archaeological evidence suggests that Numic-speaking tribes (Paiute, Shoshone, Goshute) and the Navajo entered the area (Craig Harmon, BLM RFO, Personal communication 2003). According to the idea of Numic Expansion, suggested earlier in the 20th century, Late Prehistoric peoples used the bow and arrow and had pottery which significantly altered their hunting, food gathering, and food consumption practices from Archaic traditions. However, most records and diaries kept by the early settlers in Utah contain references to the many small farming communities that they encountered in the mid-19th century along the Virgin and Santa Clara rivers in southwestern Utah. This evidence seems to contradict the Numic Expansion theory. More research on this topic is necessary.

Sites from this period begin to be located in the planning area. They have probably been observed many times before but were ascribed to and recorded as Fremont.

Historic (After ca. 1776)

The first documented Europeans in Utah arrived in 1776–1777, led by the Spanish Catholic Fathers Dominguez and Escalante. Trappers, explorers, and emigrants passing through to the Pacific coast followed them. Between the early 1830s and the late 1840s, users of what is now known as the Old Spanish Trail navigated numerous routes, many of which cross portions of the RFO (NPS 2001). European settlement of the planning area ranged from 1848 in Sanpete County to the 1880s in Wayne County (Powell 1994) and was predominantly accomplished by Mormon pioneers. These early communities focused on farming and ranching for subsistence.

A gold and silver boom in the Tushar Mountains in the 1890s and early 20th century spawned several small towns in Piute County. When the mines were no longer productive, the population boom reversed itself. Later, lead, zinc, alunite, and uranium were mined (Powell 1994). Over the years, ranching has continued as a use of public lands. Although most historic period cultural resources in the 5 county area are not located on public land, there are exceptions, such as the Wolverton Historic Mill and Starr Ranch.

3.3.5.4 Cultural Relationships

Several tribes maintain active interests in use and management of the lands managed by the RFO. Continuing consultation efforts with these groups have identified a few areas of tribal religious significance and/or traditional use within the RFO. Tribes have also expressed concerns about the preservation and protection of specific archaeological sites and impacts to prehistoric sites from disturbance.

3.3.5.5 Cultural Resource Condition and Trend

The condition and trend of cultural resources in the RFO vary considerably as a result of the diversity of terrain, geomorphology, access and visibility, and past and current land use patterns. Because recorded sites are manifested by discovery of exposed artifacts, features, and/or structures, they are easily disturbed by natural elements such as wind and water erosion, natural deterioration and decay, as well as animal and human intrusion and development and maintenance activities. On the basis of limited site monitoring, the trend of site conditions in the RFO is considered to be downward. Indications of active vandalism or collecting (unauthorized digging and "pothunting") have been observed in limited instances. Archaeological and historic sites are known to be deteriorating from a variety of causes. Many sites are deteriorating from natural causes and many others from the illegal activities of artifact collectors. Inadvertent damage from construction projects also affects resources. Collectively, these agents have adversely affected and continue to adversely affect many known cultural resources.

3.3.5.6 Consultation

Section 106 of the National Historic Preservation Act of 1966 requires the BLM and other federal agencies to take into account the effects of their undertakings on historic properties, and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment. The historic preservation review process mandated by Section 106 is outlined in regulations issued by ACHP. The BLM first determines whether it has an undertaking that is defined in the regulations as a type of activity that could affect historic properties. Historic properties are properties that are included in the NRHP or that meet the criteria for the NRHP. If so, BLM must consult with the State Historic Preservation Officer (SHPO). If BLM determines that it has no undertaking, or that its undertaking is a type of activity that has no potential to affect historic properties, the agency has no further Section 106 obligations.

In most of Utah, the BLM operates under the State Protocol Agreement with the Utah SHPO that defines the manner in which the BLM will meet its responsibilities under the NHPA as well as the National Programmatic Agreement among the BLM, the ACHP, and the National Conference of State Historic Preservation Officers. The agreement established certain review thresholds under which the BLM will request the review of the Utah SHPO and the ACHP in certain situations. These include:

- Non-routine interstate and/or interagency projects or programs
- Undertakings that directly and adversely affect National Historic Landmarks or National Register eligible properties of national significance
- Highly controversial undertakings, when council review is requested by the BLM, SHPO, a Native America tribe, a local government, or an applicant for a BLM authorization
- Undertakings affecting National Register eligible or listed properties
- Land exchanges, land sales, Recreation and Public Purposes Act (R&PP) leases, and transfers
- When BLM professional staff lack the appropriate regional experience or professional expertise, and until performance is mutually acceptable to the BLM Deputy Preservation Officer and SHPO
- When BLM's professional cultural resources staff wishes to bring a particular project to the attention of the SHPO.

The Protocol Agreement allows the BLM to streamline the review process significantly on projects that do not affect historic properties. The following steps would be followed in determining that there would be "no potential to affect": (1) identify the area of potential effect (APE); (2) conduct a Class I (literature) search and/or review other relevant records for historic properties/eligible historic properties within the APE; (3) notify the tribes or other entities that would have consulting party status of the proposed action and provide them with the opportunity to identify traditional cultural and religious properties and/or other historic and potentially eligible properties; (4) communicate/consult with tribes and other entities that would have consulting party status through letter and phone calls which, if properly documented, should demonstrate a "good faith" effort on the BLM's part; and (5) carefully and thoroughly document the BLM's findings and communications/consultation. The BLM will not request the review of the SHPO in the following situations:

- No Potential to Affect determinations by qualified BLM staff
- No Historic Properties Affected; no sites present, determined by qualified BLM staff
- No Historic Properties Affected; no eligible sites present, determined by qualified BLM staff
- No Historic Properties Affected; eligible sites present, but not affected as defined by 36 CFR 800.4.

During the life of this plan a number of actions—such as vegetation treatments, land disposals, range improvements, or energy development—may occur. Before any of the activities are implemented, the field office will take into account the effects these actions will have on cultural resources. This process is accomplished through the regulations of National Historic Preservation Act contained in Title 36 of the Code of Federal Regulations, Part 800, and agreements between BLM and the Utah State Historic Preservation Officer. Native American tribes having an interest in the area are also consulted prior to any federal undertaking.

3.3.5.7 Native American Religious Concerns

The area encompassed by the planning area boundary has seen considerable prehistoric and historic Native American use. Several federally recognized Native American tribes identified to date have either a history of traditional use in or ancestral ties to this area (although there may be other tribes interested in the area). These tribes are:

- Paiute Indian Tribe of Utah (headquartered in Cedar City, Utah)
- Uintah and Ouray Ute (headquartered in Ft. Duchesne, Utah)
- Hopi Tribe (headquartered in Kykotsmovi, Arizona)
- Navajo Nation (headquartered in Window Rock, Arizona)
- Southern Ute Tribe (headquartered in Ignacio, Colorado)
- Ute Mountain Ute Tribe (headquartered in Towaoc, Colorado)
- Kaibab Paiute Tribe (headquartered in Pipe Springs, Arizona)
- San Juan Southern Paiute Tribe (headquartered in Tuba City, Arizona)
- Moapa Paiute Band (headquartered in Moapa, Nevada)
- White Mesa Ute Band (headquartered in White Mesa, Utah).

In addition to these tribes, the BLM also includes the Navajo Utah Commission in Montezuma Creek, Utah, and the Utah Division of Indian Affairs in Salt Lake City, Utah, in discussions related to BLM actions (including land use planning).

The BLM is the present custodian of the public land in the planning area, but this was not always the case. Innumerable Native American groups were present in this area for thousands of years prior to Euro-American contact and occupation that began a few hundred years ago. Spiritual, emotional, and physical

ties between these Native Americans and their traditional homelands have existed for a long time and will no doubt continue to exist.

Native Americans practice their religions in many places on federal lands. Many of the lawful activities that are permitted or authorized on federal lands can compromise the integrity of sacred places and the privacy of religious practices. With this in mind, Executive Order (EO) 13007 on Indian Sacred Sites was signed "to protect and preserve Indian religious practices." The order obligates federal land managers to work with Native American tribes to help protect their basic rights and the practice of their religions. When planning and implementing land uses, BLM generally has the ability to accommodate tribal access to sacred sites and to prevent physical damage or intrusions that might impede their use—if the existence of the sites is known.

3.3.5.8 Tribal Interest

The Paiutes claim both traditional use of and ancestral ties to the area managed by the RFO. Their interest includes specific claims relating to important and sacred areas as well as to certain other site locations. Some of these claims have recently been documented and supported in an ethnographic study conducted by Dr. Richard Stoffle of the University of Arizona (September 2004).

The Hopi claim ancestral ties to the prehistoric groups represented here and believe that they can trace Hopi clan migrations through symbols present in area rock art. The Utes have ancestral ties to central Utah. Both the Uintah and Ouray Ute and the Hopi Tribe have been willing to enter into consultation with BLM and comment on proposals in the RFO that have the potential to affect tribal interests.

The Navajo interest in this area is confined to that part of the planning area east of Capitol Reef National Park and stems from the 1850s, when Kit Carson and the U.S. Army attempted to round up the Navajos and move them from their ancestral homeland into New Mexico. During this "Long Walk" or "Big Roundup" time, many Navajo people escaped north into the Henry Mountains and remained there for some time. As a result, the Navajo Nation claims this area as a traditional cultural property, although no formal nomination as such has been made to date. The Navajo interest also extends to the Dirty Devil River corridor and the Horseshoe Canyon drainage.

Meetings to discuss the RMP have been held with all the tribes mentioned above. A more detailed discussion of consultation with Native American tribes can be found in Chapter 5 of this Proposed RMP/Final EIS.

3.3.6 Paleontological Resources

Paleontological resources are integrally associated with the rock formations in which they are located. The geographic extent of the lands managed by the RFO contains approximately 40 sedimentary geologic formations at the surface, most containing paleontological resources.

Sedimentary formations are formed through depositional processes that lead to characteristic traits and varying potential for certain types of fossils. If extensive excavation of a certain formation in one geographic area results in substantial fossil resources, a potential exists that similar fossils will be found elsewhere in the formation, although such consistency is not a guarantee. A comprehensive paleontological resource inventory has not been completed within the RFO; however, a review of paleontological research on formations contained within the RFO has identified the types of fossil resources known to be present. Table 3-13 identifies the geologic formations within the RFO, their predominant depositional environments, and the types of fossils present. The geologic map of the planning area (Map 6 of the *Mineral Potential Report* [BLM 2005b]) displays these formations in relation to the planning area boundaries.

Table 3-13. Geologic Formations Present in the Planning Area

Formation Age	Formation Name	West[1]	East[1]	Depositional Environment	Fossils Present
Quaternary	Surficial Alluvium and Colluvium	X	X	Several	Vertebrate
	Surficial Older Alluvium and Colluvium	X	X	Several	Vertebrate
Tertiary	Sevier River Formation	X		Fluvial, Lacustrine	Vertebrate; Invertebrate
	Volcanic Rocks, Undivided	X		Volcanic with some Fluvial	Invertebrate
	Dipping Vat Formation (not noted on map)	X		Fluvial	Plant
	Grey Gulch Formation (also Bald Knoll and Aurora)	X		Lacustrine	Invertebrate; Plant
	Claron Formation (not noted on map)	X		Fluvial/Lacustrine	Invertebrate; Plant
	Green River Formation	X		Freshwater Lacustrine and Fluvial	Vertebrate; Invertebrate; Plant
	Colton Formation (not noted on map)	X		Primarily Alluvial with Marginal Lacustrine and Deltaic Facies	Vertebrate; Invertebrate
	Flagstaff Formation	X		Lacustrine/Marine	Vertebrate; Invertebrate; Plant; Trace
Cretaceous-Tertiary	North Horn Formation	X		Lacustrine/Fluvial	Vertebrate; Invertebrate; Plant; Trace

Formation Age	Formation Name	West[1]	East[1]	Depositional Environment	Fossils Present
Cretaceous	Price River Formation (Mesa Verde Group)	X		Fluvial and Floodplain	Plant
	Blackhawk Formation (Mesa Verde Group)	X		Deltaic and Interdeltaic	Trace vertebrate; Plant
	Star Point Sandstone (Mesa Verde Group)	X		Beach Sand and Intermediate Marine Shale	Plant; Trace
	Indianola Group (Sixmile Canyon Fm; Funk Valley Fm; Allen Valley Shale; Sanpete Fm)	X		Fluvial	Invertebrate
	Straight Cliffs Formation	X		Coastal Plain Interfingering with Marine	Vertebrate; Trace vertebrate; Invertebrate; Plant
	Mancos Shale (including Tununk and Wahweap Members)	X	X	Marine	Vertebrate; Trace vertebrate; Invertebrate; Trace invertebrate; Plant
	Dakota Sandstone	X	X	Beach to Marginal Marine (Deltaic)	Vertebrate; Invertebrate; Plant; Trace
	Cedar Mountain Formation		X	Fluvial	Vertebrate; Trace vertebrate; Plant
Jurassic	Morrison Formation (Brushy Basin and Salt Wash Members)	X	X	Fluvial	Vertebrate; Trace vertebrate; Invertebrate; Plant
	Summerville Formation		X	Tidal Flat	Trace vertebrate
	Curtis Formation (not noted on map)		X	Marine	Invertebrate
	Twist Gulch Formation (not noted on map)	X		Marginal Fluvial, Nearshore	Invertebrate
	Entrada Sandstone		X	Nearshore Eolian	Trace vertebrate; Plant
	Carmel Formation		X	Shallow Marine	Trace vertebrate; Invertebrate, Plant
	Arapien Shale	X		Supratidal, Marginal Nearshore Fluvial	Invertebrate; Plant
Triassic-Jurassic	Navajo Sandstone	X	X	Eolian	Trace vertebrate; Plant
Triassic	Kayenta Formation	X	X	Fluvial	Trace vertebrate; Plant
	Wingate SS (not noted on map)	X	X	Eolian	Trace vertebrate
	Chinle Formation	X	X	Fluvial	Vertebrate; Trace vertebrate; Invertebrate; Plant (wood)

Formation Age	Formation Name	West[1]	East[1]	Depositional Environment	Fossils Present
	Moenkopi Formation	X	X	Marine/Tidal Flat	Vertebrate; Trace vertebrate; Invertebrate; Trace invertebrate; Plant
Permian	Kaibab Limestone/Toroweap Formation	X	X	Marine	Invertebrate
	Cutler Group		X	Eolian, Fluvial, and Shallow Marine	Vertebrate; Invertebrate; Plant; Trace vertebrate; Trace Plant
Pennsylvanian	Hermosa Group		X	Marine	Invertebrate

Note
1—East and West refers to the eastern and western portions of the planning area, with Capitol Reef National Park forming the dividing line between the two sides.
Sources: Condon 1997; Doelling 2004; Graffam and Bourdon 1999; M. Hayden, Utah Geological Survey, Personal communication, 2004; Hintze *et al*. 2003; Rowley *et al*. 2002; Rowley, *et. al*. 2004; Steven *et al*. 1990; Stokes 1986.

More than half of the sedimentary formations (23 of 40) in the planning area are known to contain vertebrate or trace vertebrate fossils. However, some formations have a higher potential than others to contain significant numbers of vertebrate fossils. The Morrison and Cedar Mountain formations are noted for vertebrate fossils. Several complete fossil skeletons have been scientifically excavated from several specific localities in the planning area.

In addition to the potential for containing paleontological resources, paleontological localities identify areas where the presence of fossils is known. Roughly 587 paleontological localities are in the 5 counties composing the planning area. The BLM is responsible for managing about one-third of these localities.

3.3.7 Visual Resources

The planning area contains a broad range of visual settings, ranging from mountain landscapes and steep canyons, to agricultural settings, to desert. The purpose of visual resource management (VRM) is to manage the quality of the visual environment and reduce the visual impact of development activities while maintaining the viability of all resource programs. VRM involves applying methods for evaluating landscapes and determining appropriate techniques and strategies for maintaining visual quality and reducing adverse impacts.

3.3.7.1 Visual Resource Inventory

Before the current land use plans (LUP) were completed, visual resource inventories were conducted for most of the area now encompassed by the RFO. In those inventories, each acre of land was evaluated and assigned a scenic quality rating: A, B or C, with "A" representing the most scenic lands and "C" the least scenic. Criteria for determining the ratings are included in BLM Manual H-8410-1, *Visual Resource Inventory*. The BLM relied on these existing scenic quality evaluations for the purposes of this RMP revision. The earlier inventories excluded a small portion of public land in Garfield County between the Dixie National Forest and the Wayne County border. In July 2003, the BLM inventoried this area for this RMP revision.

3.3.7.2 Visual Resource Management

The BLM's VRM methodology begins with the inventory process. Landscapes are evaluated based on scenic quality, visual sensitivity, and distance zones (the distance from the existing network of travel routes). VRM class recommendations are based on the inventory process, and final class determinations are established by the RMP. The VRM Class objectives are:

- **Class I—**Preserve the existing character of the landscape. Management activity should be very limited. Change to scenery: very low and must not attract attention.
- **Class II—**Retain the existing character of the landscape. Management activities may be seen. Change to scenery should be low and not attract the attention of the casual observer.
- **Class III—**Partially retain the existing character of the landscape. Management activities may be seen and may attract the attention of the casual observer but should not dominate the view.
- **Class IV**—Allow major modifications of the existing character of the landscape. Management activities may dominate the view and be the major focus of viewer attention.

Current VRM classes for the RFO are shown below in Table 3-14 and on Map 2-1.

Table 3-14. Visual Resource Management Classes

VRM Class	Acres (BLM-Administered Surface)
Class I	0
Class II	529,500
Class III	569,000
Class IV	1,029,500

Source: BLM LUPs

It should be noted that although current LUPs for the RFO did not inventory or classify any lands as VRM Class I, the BLM's visual resource management direction for lands within wilderness study areas is guided by BLM Instruction Memorandum (IM) 2000-96. This memorandum requires that all Wilderness Study Areas (WSA) be managed according to VRM Class I management objectives until such time as the Congress decides to designate the area as wilderness or release it for other uses. The RFO contains 11 WSAs (446,900 acres) that are managed as VRM Class I.

The RFO encompasses many areas with a high degree of scenic quality and a high level of visual sensitivity. In general, high scenic quality within the RFO occurs where the area has varied topography, unique geology, and striking vistas. Areas with high visual sensitivity are the result of a high degree of visitor interest in and public concern for a particular area's visual resources, an area's high degree of public visibility, the level of use of an area by the public, and the type of visitor use that an area receives. These visual resources are appreciated by the local population and by the visiting public.

The area's scenic qualities attract visitors. The main locations in the RFO with outstanding scenic quality and/or high visual sensitivity include, but are not limited to:

- Class A scenery (VRM Class II)
- Eleven WSAs (VRM Class I)
- Scenery in the foreground, middle distance, and background zones of major paved recreation highways (U-12, U-24, U-95, U-276)
- Scenery in the foreground and middle distance zones of unpaved roads designated as Scenic Byways (Fishlake Scenic Byway and Bull Creek Pass Backcountry Byway)
- Scenery in the foreground and middle distance zones of unpaved roads designated as Utah Scenic Byways (Kimberly/Big John Road, Cove Mountain Road, Cathedral Valley Road; Thousand Lake Mountains Road, Gooseberry/Fremont Road, Notom Road, and Posey Lake Road)
- Areas along the public land/urban interface such as the Red Gates in Wayne County and the low hills surrounding the communities of Glenwood and Annabella in Sevier County.

3.3.8 Special Status Species

Special status species (SSS) are plants, fish, and animals that require particular management attention as a result of population or habitat concerns. There are 5 categories—

- Federally Listed Threatened and Endangered (T&E) Species and Designated Critical Habitats
- Federally Proposed Species and Proposed Critical Habitats
- Federal Candidate Species
- BLM Sensitive Species
- State Listed Species.

Federally listed species can have habitat designated as critical to species viability. Only the Mexican spotted owl has designated critical habitat within the planning area (Map 3-4). In the case of species that are listed and do not have critical habitat designated, BLM cooperates with the U.S. Fish and Wildlife Service (USFWS) to determine and manage habitats of importance. BLM is working with local working groups in developing management plans for several SSS.

USFWS has responsibility under a number of federal laws, treaties, EOs, and memoranda of agreement (MOA) for the conservation and management of many fish, wildlife, and plant species, and habitat. USFWS provides recommendations for protective measures for T&E species in accordance with the Endangered Species Act (ESA), as amended. Protective measures for migratory birds are provided in accordance with the Migratory Bird Treaty Act of 1918 (MBTA) and Bald Eagle Protection Act of 1940. Wetlands are afforded protection under EOs 11990 (wetland protection) and 11988 (floodplain management) and Section 404 of the CWA. Other fish and wildlife resources are considered under the Fish and Wildlife Coordination Act.

BLM has entered into an MOA with USFWS and the USFS to improve the efficiency and effectiveness of plan-level Section 7 consultation processes under the ESA. Through this MOA, BLM agrees to promote the conservation of candidate, proposed, and listed species and to informally and formally consult on listed and proposed species and designated and proposed critical habitat during planning to protect and improve the condition of species and their habitats to a point where their special status recognition is no longer necessary.

3.3.8.1 Species Listed Under the Endangered Species Act

Table 3-15 identifies the federally listed species in the planning area. The Draft Resource Management Plan/Draft Environmental Impact Statement (DRMP/DEIS) included Jones cycladenia (*Cycladenia jonesii*) as a threatened species. However, further review and surveys did not find the species within the RFO; therefore, it is not included in Table 3-15.

Table 3-15. Federally Listed Species

Common Name	Scientific Name	Status
Birds		
California Condor	*Gymnogyps californianus*	Experimental
Mexican Spotted Owl	*Strix occidentalis*	Threatened
Southwestern Willow Flycatcher	*Empidonax traillii extimus*	Endangered
Western Yellow-billed Cuckoo	*Coccyzus americanus*	Candidate

Common Name	Scientific Name	Status
Mammals		
Utah Prairie Dog	*Cynomys parvidens*	Threatened
Fish		
Bonytail Chub	*Gila elegans*	Endangered
Colorado Pikeminnow	*Ptychocheilus lucius*	Endangered
Humpback Chub	*Gila cypha*	Endangered
Razorback Sucker	*Xyrauchen texanus*	Endangered
Plants		
Wright Fishhook Cactus	*Sclerocactus wrightiae*	Endangered
Barneby Reed-Mustard	*Schoencrambe barnebyi*	Endangered
San Rafael Cactus	*Pediocactus despainii*	Endangered
Winkler Cactus	*Pediocactus winkleri*	Threatened
Last Chance Townsendia	*Townsendia aprica*	Threatened
Ute Ladies'-tresses	*Spiranthes diluvialis*	Threatened
Maguire Daisy	*Erigeron maguirei*	Threatened

Source: USFWS 2004.

California Condor

The California condor was listed as endangered on March 11, 1967, and noted to occur only in California. USFWS has reintroduced California condors into northern Arizona and southern Utah, and designated these birds as nonessential experimental populations under the ESA. The purpose of the reintroduction was to achieve a primary recovery goal: the establishment of a second noncaptive population, spatially disjunct from the noncaptive population in southern California.

California condors are among the largest flying birds in the world, with adults weighing up to 22 pounds. Condors are opportunistic scavengers, feeding only on carcasses. Since European settlement of California, condor populations have steadily declined. Poisoning, shooting, egg and specimen collecting, collisions with artificial structures, and loss of habitat contributed to the decline of the species. By 1987, the last wild condor was captured and taken to the San Diego Wild Animal Park. Beginning with the first successful breeding of California condors in 1988, the population (in 1996) was 121 individuals, including 104 in the captive flock and 17 in the wild. The condor experimental reintroduction imposes two requirements on federal agencies: (1) that they use their authority to conserve the condors, and (2) that they informally confer with USFWS on actions likely to jeopardize the condor (50 CFR Part 17).

Birds from northern Arizona frequently forage and roost in Utah and are likely to nest in southern Utah (Utah Division of Wildlife Resources [UDWR] 2005c). To date there are no known California condor nesting or roosting sites in the RFO. Threats to the condors include inadequate protection of suitable nesting sites and foraging areas near nesting sites (UDWR 2005c).

The planning area includes habitat that contains both the experimental population (Areas South of I-70) and habitat that could be occupied by California condors in non-experimental areas (North of I-70). Therefore, one analysis in the Biological Assessment (BA) includes the endangered California condor that may migrate north of I-70 and another analysis is made to determine effects on the experimental population south of I-70.

Mexican Spotted Owl

The Mexican spotted owl was listed as a threatened species on March 16, 1993. The range of the Mexican spotted owl extends from the southern Rocky Mountains in Colorado and the Colorado Plateau in central and southern Utah, southward through Arizona and New Mexico. Mexican spotted owls primarily forage at night. Their diet consists of a variety of mammals, birds, reptiles, and insects, with mammals constituting the bulk of the diet throughout the owl's range. Wood rats, voles, and gophers are the primary mammal food base. Steep slopes and canyons with rocky cliffs characterize much of the owl's habitat in the planning area.

A recovery plan was completed for the Mexican spotted owl in 1995. Mexican spotted owls in the RFO are located within the Colorado Plateau Recovery Unit. Threats to Mexican spotted owls include habitat loss associated with human disturbance and past and current timber harvest activity.

Designated critical habitat was established for the Mexican spotted owl in 2001 and revised in 2004. This designated habitat contains important nesting and foraging habitat for the owl. The critical habitat designation clarified that areas within critical habitat boundaries are considered critical habitat only when they contain or have the potential to contain habitat characteristics essential to the conservation of the species. For canyon habitats, the primary constituent elements include one or more of the following attributes: (1) cooler and often more humid conditions than the surrounding area; (2) clumps or stringers of trees and/or canyon walls with crevices, ledges, or caves; (3) a high percentage of ground litter and woody debris; and (4) riparian or woody vegetation. The primary constituent elements related to forest structure include the following: (1) a range of tree species; (2) a shade canopy created by the tree branches, covering 40 percent or more of the ground; and (3) large, dead trees with a trunk diameter of at least 12 inches (measured at 4.5 feet above ground surface).

Southwestern Willow Flycatcher

The southwestern willow flycatcher was listed as an endangered species on February 27, 1995. It breeds primarily in the southwestern United States and winters in Central America and southern Mexico. The southwestern willow flycatcher is found in the southern and eastern parts of the State of Utah, along riparian zones of the Colorado Plateau. Current population status and trends for the southwestern willow flycatcher are unknown in Utah. Critical habitat for the southwestern willow flycatcher has been designated along the Virgin River in the southwestern part of Utah near St. George. Habitat for this species exists in Wayne County (UDWR 2005a, NatureServe 2004), and there has been a sighting of the species in the Fremont Valley gateway area (Suzanne Grayson, BLM RFO, Personal communication 2004). The southwestern willow flycatcher is rare in southern Utah during the summer and is found most frequently in riparian habitats, especially in areas of dense willows associated with rivers and wetlands. The major factor in the decline of the flycatcher is the alteration/loss of the riparian habitat necessary for the species (UDWR 2005a).

Western Yellow-billed Cuckoo

This species is considered a riparian obligate and is usually found in large tracts of dense cottonwood/willow habitats (below 33 feet in height). Population status and trends within the planning area are unknown; however, a pair of yellow-billed cuckoos was heard during breeding season before 1983. More recent breeding has been recorded outside the planning area. Yellow-billed cuckoo nesting behavior may be closely tied to food abundance. The species is one of the latest migrants to arrive and breed in Utah. The yellow-billed cuckoos arrive in late May or early June and breed in late June through July. Nesting habitat is classified as dense lowland riparian characterized by a dense subcanopy or shrub layer (regenerating canopy trees, willows, or other riparian shrubs) within 333 feet of water. Threats to the species include the alteration of riparian corridors from invasive species, livestock use, and development (UDWR 2005a, NatureServe 2004).

Utah Prairie Dog

The Utah prairie dog was listed as an endangered species on June 4, 1973. On May 29, 1984, the prairie dog was downlisted to threatened. Historically, the Utah prairie dog was found in southwestern and central Utah. The habitat of a prairie dog consists of continuous grassland and other vegetation on flat plains. The prairie dog is found at elevations from 5,400 feet in Iron County to 9,500 feet in Wayne County, and lives both above ground and underground. The most obvious feature of a prairie dog colony is the abundance of mounds and holes. Utah prairie dog habitat is commonly divided into 3 recovery areas: the West Desert, the Paunsaugunt Plateau, and the Awapa Plateau. Portions of the Awapa Plateau and Paunsaugunt recovery areas are in the RFO.

Major threats to the Utah prairie dog include habitat loss (through development and drought), poisoning, and the plague. Prairie dogs are susceptible to several diseases. These factors lead to rapid decline and even disappearance of entire colonies.

A recovery plan was completed for the Utah prairie dog in 1991. A Utah Prairie Dog Interim Conservation Strategy was completed in 1997 (IM-UT 2002-040). A current management practice for the prairie dog is a translocation program. Translocation of prairie dogs is authorized by USFWS under authority of the ESA, as amended. It is anticipated that translocations will be a major part of the management of the Utah prairie dog in the future. No critical habitat has been designated for the Utah prairie dog.

Colorado River Fish

There are 4 species of fish endemic to the Colorado River Basin listed as endangered under the ESA. None of these species or their designated critical habitat occurs within the public lands administered by the RFO. Some historic habitat was found on the Dirty Devil River; however, due to fluctuations in flows, this river is not current habitat. However, because these species and their designated critical habitat are located downstream from the RFO and because some streams that traverse the RFO are tributaries to the Colorado River Basin, they are briefly discussed here.

Bonytail Chub

The bonytail chub was listed by USFWS as an endangered species in 1980. The bonytail is found in larger channels of the Colorado River system. They are endemic to the large rivers (Colorado, Green, and San Juan) of the Colorado River Basin. In April 1994, USFWS designated 1,980 miles of critical habitat for all 4 Colorado River fish in portions of Colorado, Utah, New Mexico, Arizona, Nevada, and California (50 CFR Part 17). UDWR has documented populations of bonytail chub within eastern Emery, Wayne, and Garfield counties (UDWR 2005a). Bonytail prefer eddies, pools, and backwaters near swift current in large rivers. Because the historic and occupied range of the bonytail is restricted to the mainstem of the Green River, it does not substantially extend into any tributaries, such as the Dirty Devil River, originating from the planning area (USFWS 1990a).

The historical distribution of bonytail is poorly documented, but on the basis of former collections, the optimum habitat of bonytail chubs appears to be the open river areas of relatively uniform depth and current velocity. Adults are found mainly in pools and eddies with silt, sand, or boulder substrates. Young occur in still water or shallow pools with silt or gravel (Bosworth 2003).

Threats of extinction stem from habitat loss (including alterations to natural flows and changes to temperature and sediment regimes), proliferation of non-native introduced fish, and other artificial disturbances (USFWS 1994b). Goals for management and conservation of bonytail are described in *Bonytail* (*Gila elegans*) *Recovery Goals*: *Amendment and Supplement to the Bonytail Chub Recovery*

Plan (USFWS 2002a), and incorporated in Appendix 14 of this Proposed Resource Management Plan/Final Environmental Impact Statement (PRMP/FEIS).

Colorado Pikeminnow

The Colorado pikeminnow (formerly known as the Colorado squawfish) is a large minnow native to the Colorado River system of the western United States and Mexico. USFWS designated this species as endangered in 1967, and the species is also included in the UDWR Sensitive Species List (2003). The species is distributed within Wayne and Garfield counties in large mainstem rivers (Green River and Colorado River) and in the lower reaches of major tributaries. In the Green River drainage, the mainstem is occupied from the confluence with the Colorado River upstream through Dinosaur National Monument. Because the historic and occupied range of the pikeminnow is restricted to the mainstem of the Green River, it does not substantially extend into any tributaries, such as the Dirty Devil River, originating from the planning area (USFWS 1991).

Changes in sediment deposition patterns, flow, and temperature caused by dams have resulted in loss and alteration of aquatic habitats and have favored non-native competitors and predators (Bosworth 2003). Threats of extinction stem from habitat loss (including alterations to natural flows and changes to temperature and sediment regimes), proliferation of non-native introduced fish, and other artificial disturbances (USFWS 1994b). Recovery goals have been formulated to guide management and conservation efforts and are described in *Colorado Pikeminnow* (*Ptychocheilus lucius*) *Recovery Goals: Amendment and Supplement to the Colorado Squawfish Recovery Plan* (USFWS 2002b), and are incorporated as conservation measures in Appendix 14 of this PRMP/FEIS.

Humpback Chub

The humpback chub is a rare minnow native to the upper Colorado River system. Because of the severe declines in humpback chub numbers and distribution, the species was listed as endangered in 1967 and is also included in the UDWR Sensitive Species List (2003). USFWS designated critical habitat in April 1994, as described under *bonytail chub*, above.

Humpback chub originally thrived in the fast, deep whitewater areas of the Colorado River and its major tributaries; but flow alterations, which have changed the turbidity, volume, current speed, and temperature of the water in those rivers, have had significantly adverse impacts on the species. Humpback chub in Utah are now confined to a few whitewater areas in the Colorado, Green, and White rivers (Bosworth 2003). Because the historic and occupied range of the humpback chub is restricted to the mainstem of the Green River, it does not substantially extend into any tributaries, such as the Dirty Devil River, originating from the planning area (USFWS 1990b).

Threats of extinction stem from habitat loss (including alterations to natural flows and changes to temperature and sediment regimes), proliferation of non-native introduced fish, and other artificial disturbances (USFWS 1994b). Recovery goals to guide management and conservation of the species are documented in *Humpback Chub Recovery Goals: Amendment and Supplement to the Humpback Chub Recovery Plan* (USFWS 2002c), and incorporated as conservation measures in Appendix 14.

Razorback Sucker

The razorback sucker was listed as endangered in 1991 and is also included in the UDWR Sensitive Species List (UDWR 2003). The species is believed to have historically occupied much of the Green, Colorado, and San Juan rivers, as well as the lower portions of large tributaries such as the White and Duchesne rivers. Razorback sucker occur in water of desert and submontane elevations. Habitat may vary seasonally and includes pools, slow runs, backwaters, and flooded off-channel areas (Bosworth 2003). Current distribution patterns are difficult to interpret, primarily because the species is rarely encountered.

USFWS designated critical habitat in April 1994, as described under *bonytail chub*. A subpopulation of approximately 100 adults was found in the 1990s occupying the middle Green River, and UDWR has noted population distribution within Wayne County (Bosworth 2003, UDWR 2005a). Because the historic and occupied range of the razorback sucker is restricted to the mainstem of the Green River, it does not substantially extend into any tributaries, such as the Dirty Devil River, originating from the planning area (USFWS 1998).

The razorback sucker eats mainly algae, zooplankton, and other aquatic invertebrates. Successful reproduction has not been documented in the last 25 years. Spawning occurs during a 6-week period in April and May when water temperatures reach 53°F–64°F.

Threats of extinction stem from habitat loss (including alterations to natural flows and changes to temperature and sediment regimes), proliferation of non-native introduced fish, and other artificial disturbances (USFWS 1994b). The USFWS has developed recovery goals to guide management and conservation efforts (USFWS 2002d).

Wright Fishhook Cactus

Wright fishhook cactus is a federally listed endangered plant that occurs in Emery, Sevier, and Wayne counties. The species is found in soils that range from clays to sandy silts to fine sands, typically in areas with well-developed biological soil crusts (Clark and Clark 1999). Wright fishhook cactus grows in salt desert shrub and widely scattered pinyon-juniper woodlands at elevations ranging from 4,280 to 6,440 feet (Utah Native Plant Society 2004). The species and its habitat are vulnerable to disturbance from domestic livestock grazing, mineral resource development, and OHV use (USFWS 1979).

Barneby Reed-Mustard

Barneby reed-mustard is a federally listed endangered plant found only in Emery and Wayne counties. The species grows on red clay soils rich in selenium and gypsum, overlain with sandstone talus derived from the Moenkopi and Chinle geologic formations (USFWS 1994a). Barneby reed-mustard grows in sparsely vegetated sites in mixed desert shrub and pinyon-juniper woodlands, at elevations ranging from 4,788 to 6,510 feet (Clark and Clark 1999). Potential threats to the population of Barneby reed-mustard include mining, trampling by hikers, and road or recreation development (USFWS 1994a).

San Rafael Cactus

San Rafael cactus is a federally listed endangered plant that grows in Emery and Wayne counties. It is found in fine-textured soils rich in calcium derived from the Carmel Formation and the Sinbad Member of the Moenkopi Formation. The species grows on benches, hilltops, and gentle slopes in pinyon-juniper woodlands and mixed desert shrub-grassland communities, at elevations ranging from 4,756 to 6,822 feet (Utah Native Plant Society 2004; USFWS 1995c). The habitat of San Rafael cactus is vulnerable to surface disturbance from OHV use, trampling by humans and livestock, and mineral resource exploration and development (Clark and Clark 1999).

Winkler Cactus

Winkler cactus is a federally listed threatened plant that occurs in Emery and Wayne counties. The species is a small, nearly round cactus with solitary or clumped stems. The crown of the stem is at or very near ground level (Utah Rare Plant Society 2004). Winkler cactus is found in fine-textured soils derived from the Dakota Formation and the Brushy Basin Member of the Morrison Formation (Utah Native Plant Society 2004). It occurs on benches, hilltops, and gentle slopes on barren, open sites in salt desert shrub communities, at elevations ranging from 4,888 to 6,592 feet (USFWS 1995c). The habitat of the species is vulnerable to surface disturbance from OHV use, trampling by humans and livestock, and mineral resource exploration and development (Clark and Clark 1999).

Last Chance Townsendia

Last Chance townsendia is a federally listed threatened plant that occurs in Emery, Sevier, and Wayne counties. The species is found in clay, clay-silt, or gravelly clay soils derived from the Mancos Formation. These soils are often densely covered with biological soil crusts. Last Chance townsendia grows in salt desert shrub and pinyon-juniper woodlands at elevations ranging from 5,531 to 8,396 feet (USFWS 1985). Threats to Last Chance townsendia populations include poor rangeland conditions, trampling by OHV recreation use, trampling by livestock, and mining (USFWS 1993a).

Ute Ladies'-Tresses

Ute ladies'-tresses was first listed as threatened on January 17, 1992. It is currently designated as threatened across the entire range. The species is known to occur in Colorado, Idaho, Montana, Nebraska, Utah, Washington, and Wyoming (USFWS 1992). Ute ladies'-tresses is found in moist to very wet meadows, along streams, in abandoned stream meanders, and near springs, seeps, and lake shores. It grows in sandy or loamy soils that are typically mixed with gravels. In Utah, the species ranges in elevation from 4,301 to 7,001 feet. Populations have been documented in wetlands near Utah Lake in northern Utah (2 populations) and in low-elevation riparian areas in the Colorado River drainage in eastern Utah (6 populations) (USFWS 1992). The species occurs in Garfield and Wayne counties in the planning area.

A member of the orchid family, Ute ladies'-tresses is a perennial herb with a flowering stem (8–20 inches tall) that rises from a basal rosette of grass-like leaves. The flowers are ivory-colored, arranged in a spike at the top of the stem, and bloom mainly from late July through August. Recovery objectives for the species are documented in the *Ute Ladies'-Tresses Recovery Plan* (USFWS 1995b).

Threats to the species include loss of habitat from fragmentation of land due to conversion to suburban and urban areas and management of water and stream systems for municipal, agricultural, and recreation uses (USFWS 1995b).

The Ute ladies'-tresses is not currently known to occur on lands administered by the BLM RFO. The species exists within the boundary of the planning area; however, it is located only on lands administered by the Fish Lake National Forest and the Capitol Reef National Park. Surveys have been conducted on BLM land, and to date, this species has not been identified. BLM lands in the planning area provide limited habitat that could support the Ute ladies'-tresses.

Maguire Daisy

Maguire daisy is a federally listed threatened plant that occurs in Emery, Garfield, and Wayne counties. The species grows on the sand and rubble weathered from Wingate, Chinle and Navajo Sandstone, and rarely, the Kayenta Formation (Utah Native Plant Society 2004 and Clark and Clark 1999). It is found in slickrock-crevices, on ledges, and in the bottoms of washes, at elevations ranging from 5,248 to 8,200 feet (Clark and Clark 1999). In 1996, the Maguire daisy was downlisted from endangered to threatened based on the discovery of 12 additional populations. Threats to existing Maguire daisy populations are primarily from OHV use and livestock trampling (USFWS 1995d).

3.3.8.2 BLM Sensitive Species

Table 3-16 identifies those non-listed special status plant and animal species that are known or thought to occur on public lands administered by the RFO (IM-UT 2003-027). The Utah BLM Sensitive Species list changes periodically and is updated accordingly as species are added to or deleted from the list. Changes to the Utah BLM Sensitive Species list would be incorporated into the RFO RMP as they occur.

Table 3-16. Utah BLM Sensitive Species

Common Name	Scientific Name	UDWR Status
Mollusks		
California Floater	*Anodonta californiensis*	Species of Concern
Ninemile Pyrg	*Pyrgulopsis nonaria*	Species of Concern
Otter Creek Pyrg	*Pyrgulopsis fusca*	Species of Concern
Southern Bonneville Pyrg	*Pyrgulopsis transversa*	Species of Concern
Carinate Glenwood Pyrg	*Pyrgulopsis inopinata*	Species of Concern
Smooth Glenwood Pyrg	*Pyrgulopsis chamberlini*	Species of Concern
Black Canyon Pyrg	*Pyrgulopsis plicata*	Species of Concern
Amphibians		
Western (Boreal) Toad	*Bufo boreas*	Species of Concern
Great Plains Toad	*Bufo cognatus*	Species of Concern
Columbia Spotted Frog	*Rana luteiventris*	Conservation Agreement Species
Reptiles		
Common Chuckwalla	*Sauromalus ater*	Species of Concern
Desert Night Lizard	*Xantusia vigilis*	Species of Concern
Birds		
Bald Eagle	*Haliaeetus leucocephalus*	Species of Concern
American White Pelican	*Pelecanus erythrorhynchos*	Species of Concern
Ferruginous Hawk	*Buteo regalis*	Species of Concern
Greater Sage-Grouse	*Centrocercus urophasianus*	Species of Concern
Long-Billed Curlew	*Numenius americanus*	Species of Concern
Burrowing Owl	*Speotyto cunicularia*	Species of Concern
Short-Eared Owl	*Asio flammeus*	Species of Concern
Black Swift	*Cypseloides niger*	Species of Concern
Lewis's Woodpecker	*Melanerpes lewis*	Species of Concern
American Three-Toed Woodpecker	*Picoides dorsalis*	Species of Concern
Northern Goshawk	*Accipiter gentilis*	Conservation Agreement Species
Grasshopper Sparrow	*Ammodramus savannarum*	Species of Concern
Mammals		
Fringed Myotis	*Myotis thysanodes*	Species of Concern
Western Red Bat	*Lasiurus blossevillii*	Species of Concern
Spotted Bat	*Euderma maculatum*	Species of Concern
Townsend's Big-Eared Bat	*Corynorhinus townsendii*	Species of Concern
Allen's Big-Eared Bat	*Idionycteris phyllotis*	Species of Concern
Big Free-Tailed Bat	*Nyctinomops macrotis*	Species of Concern
Pygmy Rabbit	*Brachylagus idahoensis*	Species of Concern
Kit Fox	*Vulpes macrotis*	Species of Concern
Fish		
Bonneville Cutthroat Trout	*Oncorhynchus clarkii utah*	Conservation Agreement Species
Colorado River Cutthroat Trout	*Oncorhynchus clarkii pleuriticus*	Conservation Agreement Species
Southern Leatherside Chub	*Lepidomeda aliciae*	Species of Concern
Roundtail Chub	*Gila robusta*	Conservation Agreement Species

Common Name	Scientific Name	UDWR Status
Bluehead Sucker	*Catostomus discobolus*	Conservation Agreement Species
Flannelmouth Sucker	*Catostomus latipinnis*	Conservation Agreement Species
Plants		
Rabbit Valley Gilia, also known as Wonderland Alice-flower	*Gilia cespitosa also known as Aliciella cespitosa*	Conservation Agreement Species[1]
Utah Phacelia	*Phacelia utahensis*	
Basalt Milkvetch	*Astragalus subcinereus var. basalticus*	
Pinnate Spring Parsley	*Cymopterus beckii*	Conservation Agreement Species[1]
Creutzfeldt cryptanth	*Cryptantha creutzfeldtii*	
Hole-in-the-Rock Prairie-Clover	*Dalea flavescens var. epica*	
Cronquist Wild Buckwheat	*Eriogonum corymbosum var. cronquistii*	
Smith Wild Buckwheat	*Eriogonum corymbosum var. smithii*	
Utah Spurge	*Euphorbia nephradenia*	
Cataract Gilia	*Gilia latifolia var imperialis*	
Mussentuchit Gilia	*Gilia tenuis* *Also known as Aliciella tenuis*	Conservation Agreement Species[1]
Alcove Bog-Orchid	*Habenaria zothecina*	
Greenwood's Goldenbush	*Haplopappus lignumviridis*	
Claron Pepperplant	*Lepidium montanum var. claronense*	
Entrada Rushpink	*Lygodesmia grandiflora var. entrada*	
Jones' Indigo Bush	*Psorothamnus polydenius var. jonesii*	
Arapien Blazingstar	*Mentzelia argillosa*	
Jane's Globemallow	*Sphaeralcea janeae*	
Psoralea Globemallow	*Sphaeralcea psoraloides*	
Alpine Greenthread	*Thelesperma subnudum var. alpinum also known as Thelesperma windhamii*	
Sigurd Townsendia	*Townsendia jonesii var. lutea*	

Note:

[1]Central Utah Navajo Sandstone Endemics Conservation Agreement for *Aliciella caespitosa* (Rabbit Valley gilia or Wonderland alice-flower), *Aliciella tenuis* (Mussentuchit gilia), *Astragalus harrisonii* (Harrison's milkvetch), *Cymopterus beckii* (Pinnate spring-parsley), *Erigeron maguirei* (Maguire's Daisy). 2006. Forest Service, Fishlake National Forest; Bureau of Land Management, Utah State Office; National Park Service, Capitol Reef National Park; Fish and Wildlife Service, Utah Field Office.

Unless otherwise noted, the information presented below for non-listed special status plant and animal species comes from the UDWR website (www.wildlife.utah.gov). Additional information on these species can be obtained at this site.

Mollusks

California floater *(Anodonta californiensis)*

The California floater has been found in Piute and Otter Creek reservoirs within the RFO planning area. At least 2 other extant occurrences are known in Utah and Millard counties. Known habitat ranges from muddy bottoms with depths of 6 to 10 inches among watercress to creeks 5 to 15 feet wide, up to 18

inches deep, with a bottom of gravel and sand in flowing areas and mud in pools. It is thought that populations of this species may be declining due to pesticides in agricultural run-off, habitat degradation by cattle, and water diversion.

Ninemile Pyrg *(Pyrgulopsis nonaria)*

The Ninemile pyrg is known to inhabit 2 springs near Ninemile Reservoir in Sanpete County. It is not known to inhabit public land administered by the RFO; however, springs on BLM land may provide habitat for the species. The species is "abundant" in 1 of the 2 springs it inhabits, but actual population size and trends are unknown. The limited occurrence of this species and the vulnerability of its habitat suggest that potential threats to the species are great. Inventories for this species within potential habitat on RFO-administered land would be beneficial.

Otter Creek Pyrg *(Pyrgulopsis fusca)*

The Otter Creek pyrg is associated with habitats produced by the outflow of springs. Only 3 known populations of this species exist; 1 population is in Piute County and 2 are in Sevier County. None of these populations is on public land administered by the RFO; however, springs on BLM land may provide potential habitat for the species. It is reported to be "common" at 2 of the 3 localities, but due to its limited distribution, its overall population should be regarded as very low. The restricted habitat and distribution of the species suggest that threats to its survival are potentially great. Inventories for this species within potential habitat on RFO-administered land would be beneficial.

Southern Bonneville Pyrg *(Pyrgulopsis transversa)*

This species is known from 6 springs, all in north-central Utah; 4 of these localities are in Tooele County, 1 is in Utah County, and 1 is in Sanpete County. Although the population in Sanpete County is within the RFO planning area, it is not on BLM-administered land. Despite the relative abundance of this species being reported as "common" to "abundant," its restriction to 6 springs implies a low population. Inventories for this species within potential habitat on RFO-administered land would be beneficial.

Carinate Glenwood Pyrg *(Pyrgulopsis inopinata)*

There are 2 known populations of this species, both inhabiting springs near Glenwood in Sevier County. Neither population is on public land administered by the RFO; however, springs on BLM land may provide potential habitat for this species. This species is considered "scarce" at one locality, and at the other, it may be hybridizing with another species. Habitat degradation due to recreational use has occurred at these springs. The limited distribution and habitat degradation are threats to this species. Inventories for this species within potential habitat on RFO-administered land would be beneficial.

Smooth Glenwood Pyrg *(Pyrgulopsis chamberlini)*

There are 2 known populations of this species, both inhabiting springs near Glenwood in Sevier County. Neither population is on public land administered by the RFO; however, springs on BLM land may provide potential habitat for this species. This species was reported as "abundant"; however, because it occurs only in 2 closely associated springs, its overall abundance must be considered very low. The habitat used by this species is highly disturbed from recreational use. The threat to the continued existence of the species is considered high due to its limited distribution and the degradation of its habitat. Inventories for this species within potential habitat on RFO-administered land would be beneficial.

Black Canyon Pyrg *(Pyrgulopsis plicata)*

The single locality of occurrence for this species is described as a series of small springs emerging from a steep hillside in Black Canyon, East Fork Sevier River, Garfield County, Utah. It is reported as "common" at this locality; however, its overall abundance must be extremely low because it occurs in only one spring complex. This known population is on private land within the RFO planning area. Inventories for this species within potential habitat on RFO-administered land would be beneficial.

Amphibians

Western (Boreal) toad *(Bufo boreas)*

Often known as the Western toad, this species is widely scattered throughout the northwestern United States and Canada. It is found throughout much of Utah in a variety of habitats, including slow moving streams, wetlands, desert springs, ponds, lakes, meadows, and woodlands. Many of these habitats are located on lands administered by the RFO.

Great Plains toad (*Bufo cognatus)*

The Great Plains toad inhabits the central United States, much of Mexico, and limited areas of Canada. In Utah, the Great Plains toad occurs in scattered areas throughout the State, including portions of the RFO planning area, where it prefers desert, grassland, and agricultural habitats. This species breeds in shallow water after rains during spring and summer months. Females lay clutches of approximately 3,000 eggs, which hatch in several days. Adult toads eat insects primarily, whereas tadpoles eat plants, detritus, and algae. In cold winter months, the Great Plains toad burrows underground and becomes inactive. The Great Plains toad is usually light brown with darker brown or brownish-green irregular splotches.

Columbia spotted frog *(Rana luteiventris)*

This species is on the UDWR Sensitive Species List (UDWR 2003) as a Conservation Species, and a multi-agency conservation agreement was completed in 1998. In Utah, isolated Columbia spotted frog populations exist in the West Desert and along the Wasatch Front. Within these regions, populations are tied to aquatic habitat and perennial sources of water (Bosworth 2003). UDWR has documented populations of Columbia spotted frog in Sanpete, Sevier, Piute, Wayne, and Garfield counties.

Adult frogs eat a wide variety of food items, ranging from insects to snails, whereas tadpoles eat algae, plants, and small aquatic organisms. Typically, breeding sites have little or no current and are surrounded by dense aquatic vegetation. The Columbia spotted frog breeds as early in the spring as winter thaw allows, with eggs hatching in 3–21 days depending on temperature. During cold winter months, spotted frogs burrow in the mud and become inactive.

Populations are vulnerable to the loss and degradation of aquatic habitat. Historically, wetland destruction associated with development, as well as water withdrawal, pollution, livestock use, or competition from non-native species, have contributed to the species' decline (UDWR 2005a, NatureServe 2004).

Reptiles

Common chuckwalla *(Sauromalus ater)*

Chuckwallas are large lizards, sometimes exceeding 8 inches in length not including the tail. They occur in the southwestern United States and in parts of Mexico. In Utah, the species occurs only in the southern portion of the State, including areas of Garfield County administered by the RFO. Chuckwallas are predominantly found near cliffs, boulders, or rocky slopes, where they use rocks as basking sites and rock crevices for shelter. Chuckwallas are primarily herbivores, although they also consume insects. Female

chuckwallas lay 1 clutch of 5 to 15 eggs during the summer months. They are most active from spring through fall, remaining inactive in deep rock crevices during the cold of winter. They will also retreat into rock crevices during extreme heat.

Desert Night Lizard *(Xantusia vigilis)*

The desert night lizard is found in the southwestern United States and in Baja, California. In Utah, it occurs in a few small areas in the southern part of the State. It has been found in Garfield County on lands administered by the RFO. The desert night lizard is rarely seen because it is extremely secretive and spends much of its time under cover. It is a small lizard, only about 1.5 inches long, not including the tail. This species breeds in May and June. Females give birth to live young (usually 1 to 3) in late summer or early fall. The desert night lizard eats a variety of insects and other small invertebrates.

Birds

Bald Eagle (*Haliaeetus leucocephalus*)

The bald eagle, the national symbol of the United States, was first protected under the Bald Eagle Protection Act of 1940, and then later listed as an endangered species in most of the lower 48 states in 1966 and again in 1973. Since DDT was banned in 1972, the bald eagle has made a remarkable recovery throughout the United States. Its status was changed to threatened in 1995, and the bald eagle was delisted in 2007. Even though they are delisted, bald eagles are still protected by the MBTA and the Bald and Golden Eagle Protection Act. These Acts require some measures to continue to prevent bald eagle "take" resulting from human activities. The bald eagle is found throughout the State of Utah (more often seen in winter than summer). Habitat consists of communal winter roosting habitat and foraging habitat that is located within the RFO. Feeding areas, diurnal perches, and night roosts are fundamental elements of bald eagle winter range. In Utah, eagles nest in mature cottonwoods. Nesting has been documented in Wayne County (UDWR 2003). Wintering habitat exists within Sanpete, Sevier, Piute and Wayne counties. Fish and waterfowl are the primary sources of food for bald eagles, but they will also feed on rabbits, carrion, and small rodents.

American white pelican (*Pelecanus erythrorhynchos*)

The primary breeding habitat for this species is in the northern part of the State. However, during spring migration, the breeding season, and fall staging and migration periods, American white pelicans can be observed at many reservoirs throughout the State. Fall migration can extend from October through December, and birds typically return to Utah in early March. Within the RFO area, this species can be found on Piute and Otter Creek reservoirs.

The white pelican's primary food is fish, which is often sought in water less than 8.2 feet (2.5 meters) deep. White pelicans are diurnal and nocturnal foragers, and cooperative foraging is often used in shallow water. They forage mainly on "rough fish," which are often small (less than one-half bill length). Nesting in colonies and using cooperative flight and foraging strategies, pelicans are among the most gregarious and social of avian species. They are often observed sleeping, roosting, and sun bathing together. They are monogamous; pair formation occurs after arrival in Utah, typically the last week in March. For the colony as a whole, nest initiation extends over 3 months in Utah. The 2-egg clutch is incubated for 30 days. Nestlings are attended by parents for about 3 weeks; then the young congregate into pods.

Ferruginous hawk *(Buteo regalis)*

This species is distributed throughout much of Utah, although it is rare and productivity may not be sufficient to maintain the State's populations. Use of nesting substrate varies throughout this species'

range and includes trees, shrubs, cliffs, utility structures, and ground outcrops. Haystacks and abandoned buildings have also been used. Ferruginous hawk density varies regionally and temporally as prey densities vary. Their primary food source is small mammals, such as rabbits and hares, prairie dogs, and pocket gophers. Ferruginous hawk habitat is found in much of the area administered by the RFO. Threats include human disturbance (recreation, mineral development, etc.) and loss of preferred pinyon-juniper woodland habitats. The species is prone to abandon nest sites with low levels of human disturbance.

Greater sage-grouse *(Centrocercus urophasianus)*

This species inhabits sagebrush plains, foothills, and mountain valleys. Sagebrush is the predominant plant of quality habitat. The largest population of Greater sage-grouse in Utah is found in Wayne County. The species is also distributed throughout Sanpete, Sevier, Piute, and Garfield counties in areas dominated by sagebrush. An understory of grasses and forbs, as well as wet meadow areas, are essential elements of sage-grouse habitat, especially for survival of young chicks. The Greater sage-grouse is an herbivore, and insectivore and is associated with both tall and short sagebrush types. Sage-grouse use the same breeding grounds, or "leks," over several consecutive breeding seasons. Greater sage-grouse are ground nesters and are susceptible to predators and human disturbance, including mineral exploration and development and OHV use. Greater sage-grouse rely entirely on sagebrush for their winter diet and are found in sagebrush habitats during the winter months where the sagebrush remains above the level of the snow, or on windswept ridges where sagebrush is available as both forage and cover. Additional threats to the species include habitat loss, invasive plants, and conversion of large areas from shrub steppe to non-native grasslands (UDWR 2005a, NatureServe 2004).

Several research projects targeting the Greater sage-grouse population in the Parker Mountain area indicate that the population has increased from about 600 birds in 1997 to about 6,000 birds in 2007 (Guttery et al. 2007). The vitality of the Parker Mountain sage-grouse population is evidenced by the fact that this population is one of the few areas in Utah where sufficient numbers of breeding individuals are present to allow a limited annual harvest. (UDWR 2007). Monitoring indicates that the vegetation treatments in the Parker Mountain area provide greater vegetation diversity than untreated or control plots (Guttery et al. 2007). Monitoring in 2007 also discovered that most-sage-grouse pellets were found within fewer than 131 feet (40 meters) of intact sagebrush or treatment areas (Guttery et al. 2007).

Long-billed Curlew *(Numenius americanus)*

In Utah, this species is a fairly common summer resident and migrant. The curlew lives and breeds in higher and drier meadowlands than many other shorebird species. Uncultivated rangelands and pastures located within the planning area support the majority of breeding populations. Food sources include crustaceans, mollusks, worms, toads, insects, and sometimes berries. According to the UDWR, long-billed curlews have 4 essential nesting habitat requirements: short grass (less than 12 inches [30 cm]), bare ground components, shade, and abundant vertebrate prey.

Burrowing owl *(Speotyto cunicularia)*

This species prefers open areas within deserts, grasslands, and sagebrush steppe communities. Both primary and secondary breeding habitat exists in Sanpete, Sevier, Piute, Wayne, and Garfield counties. Habitat consists of well-drained, level-to-gently-sloping areas characterized by sparse vegetation and bare ground, such as moderately or heavily grazed pasture. Burrowing owls breed in native prairie as well as in cultivated pasture, hay fields, fallow fields, road and railroad rights-of-way (ROW), and in a number of urban habitats. They are obligate nesters that nest in ground burrows of prairie dogs or other burrowing mammals. Threats to the population include habitat loss, declining prairie dog populations, and pesticides (UDWR 2005a, NatureServe 2004).

Short-eared owl *(Asio flammeus)*

This is a medium-sized owl that frequently flies during daylight, especially at dusk and dawn, as it forages for rodents. The short-eared owl is usually found in grasslands, shrublands, and other open habitats common in the RFO. It is nomadic, often choosing a new breeding site each year, depending on local rodent densities. The owls nest on the ground in a small depression that is usually lined with a small amount of grass and other plant material. There is some concern that short-eared owl populations are declining in Utah.

Black swift *(Cypseloides niger)*

The black swift occurs in mountainous regions of the western United States and Canada. Little is known of the historic range of this species. Currently, black swifts occur in 3 widely separated areas, 1 of which is central Colorado through central Utah. They are thought to be extremely rare in Utah, with only 2 confirmed breeding locations. Black swifts are aerial insectivores and feed exclusively on flying insects. They nest is small colonies near and often behind waterfalls. Adults are long lived. Nesting sites are typically surrounded by coniferous forests, often mixed conifer or spruce-fir forests. The preferred habitat for the black swift is limited in the RFO.

Lewis's woodpecker *(Melanerpes lewis)*

This species ranges from southern British Columbia to its wintering grounds in northwestern Mexico. In Utah, it is primarily found in the central part of the State. The Lewis's woodpecker is a cavity nester, excavating a hole in tall trees that are often dead or blackened by fire. It will also nest in utility poles or stumps but prefers ponderosa pine, cottonwood, or sycamore, all of which are found within the RFO. The diet of this woodpecker consists of insects, nuts, and berries depending on the time of the year. Areas with a good understory of grasses and shrubs to support insect prey populations are preferred.

American three-toed woodpecker *(Picoides dorsalis)*

This species of woodpecker extends from Canada through Utah and into New Mexico. It is found in Engelmann spruce, subalpine fir, Douglas fir, ponderosa pine, tamarack, aspen, and lodgepole pine forests. This woodpecker tends to stay in its territory year-round, although insect outbreaks, such as spruce bark beetle infestations, may cause irregular movements. Habitat of the American three-toed woodpecker is found in the higher elevations of the RFO.

Northern goshawk *(Accipiter gentilis)*

The northern goshawk is found in much of the northern hemisphere. It is a permanent resident in Utah, but is not common in the State. The hawk prefers mature mountain forest and riparian zone habitats, both of which are found in the planning area. Nests are constructed in trees in mature forests. The northern goshawk often nests in the previously used nests of northern goshawks or other bird species. This species cruises low through forested areas and also perches to hunt prey. Major prey includes rabbits, hares, squirrels, and birds.

Grasshopper sparrow *(Ammodramus savannarum)*

This species of sparrow is a grasslands bird; therefore, potential habitat is limited in the RFO. In Utah, breeding populations have been found only in the northern parts of the State. Nests are built of grass on the ground at the base of grass clumps. As its name implies, this species' primary diet is grasshoppers.

Mammals

Fringed myotis *(Myotis thysanodes)*

This small bat is found in much of the western United States. It is widely distributed throughout Utah but is not very common in the State. The fringed myotis commonly inhabits caves, mines, and buildings, most often in desert and woodland areas, which are common in the RFO. Beetles are the major prey for this species.

Western red bat *(Lasiurus blossevilli)*

The Western red bat is found in the western United States. It is extremely rare in Utah and is known to inhabit only a few locations in the State. As a result, it is included on the UDWR Sensitive Species List. This species of bat is normally found near water, often in wooded areas. While some individuals hibernate during cold times, most will migrate south to warmer climates for the winter. The species is nocturnal. It feeds on insects, often foraging near riparian areas.

Spotted bat *(Euderma maculatum)*

This species occurs throughout much of the western United States. It is found statewide in Utah, but has probably never been abundant in any particular location. The spotted bat may be found in a variety of habitats, ranging from deserts to forested mountains. It roosts and hibernates in caves and rock crevices. These types of habitats are scattered throughout the RFO. Spotted bats eat insects, primarily moths, which are captured in flight. Current data suggest that populations of this species may be declining in Utah. Consequently, the spotted bat is now included on the UDWR Sensitive Species List.

Townsend's big-eared bat *(Corynorhinus stownsendii)*

This species occurs in western North America from southwestern Canada to Mexico. In Utah, it occurs statewide at elevations below 9,000 feet. Townsend's big-eared bat can be found in many types of habitat, but is often found near forested areas. Caves, mines, and buildings are used for day roosting and winter hibernation. The species is nocturnal, and individuals typically do not leave their roosts until well after sunset. This species is thought to be declining in population in Utah due to human disturbances of caves and the closings of abandoned mines.

Allen's big-eared bat *(Idionycteris phyllotis)*

Allen's big-eared bat is one of the most poorly known bat species in North America. It was not known to inhabit Utah until 1969. It is known to occur only in the southern portion of the State. Because of its rarity, this species is included on the UDWR Utah Sensitive Species List. Preferred habitats include rocky and riparian areas in woodland and scrubland regions. Allen's big-eared bat is an insectivore, eating insects captured in flight or plucked from vegetation. It is nocturnal, roosting in caves or rock crevices during the day.

Big free-tailed bat *(Nyctinomops macrotis)*

This species is found in the western United States. It is rare in Utah, occurring primarily in the southern half of the State. The big free-tailed bat prefers rocky and woodland habitats. Roosting occurs in caves, mines, old buildings, and rock crevices. It is typically active year-round, migrating to warmer areas in the south during the winter months. This species eats insects, primarily moths.

Pygmy rabbit *(Brachylagus idahoensis)*

This species can be found throughout Utah, including within the RFO. The pygmy rabbit habitat in the RFO is limited to 1 percent of the planning area. The species prefers areas with tall, dense sagebrush and loose soils. Pygmy rabbits occur in isolated patches because of their specific life history requirements. Their habitat consists of deep soils and tall, dense sagebrush and high shrub cover. Pygmy rabbits are active throughout the year and are most often above ground near dawn and dusk. Inactive periods are spent in underground burrows. Pygmy rabbits depend on sagebrush for their winter diets and during summer shift to more grasses and forbs. Declines in population are related to the degradation or loss of sagebrush steppe habitat. If actions were proposed in pygmy rabbit habitat, site-specific National Environmental Policy Act (NEPA) provisions would be needed to address restrictions (e.g., avoidance or mitigation) around pygmy rabbit habitat.

Kit fox *(Vulpes macrotis)*

The kit fox is the smallest canid in North America. It is found exclusively in arid and semi-arid landscapes and occupies habitats that provide favorable combinations of low predator abundance, sufficient prey, and soils suitable for denning. The kit fox is one of the few canids in the world to use year-round dens which provide protection from predators, aid in thermoregulation, and reduce water loss. The kit fox opportunistically eats small mammals (primarily rabbits and hares), small birds, invertebrates, and plant matter. It is capable of meeting all its water requirements metabolically without the need for drinking water. The fox is primarily nocturnal. It mates in late winter, with 4 to 7 pups being born about 2 months later.

There are many threats to the kit fox in Utah. Invasive weeds affect their prey base by decreasing small mammal diversity and abundance. To compensate for a reduced prey base, kit fox home ranges become larger, fecundity declines, and dispersing young are required to travel further making them more vulnerable to predators. Water developments for game and livestock effectively decrease the amount of arid lands suitable only for kit fox occupation. Increased year-round availability of water in the most arid areas of Utah serves to extend the distribution of coyotes and red fox, which prey upon kit fox, into areas previously too arid to support them. Competitive interactions with larger canids, especially when populations are already depressed, can have major effects on kit fox populations.

Fish

Bonneville cutthroat trout *(Oncorhynchus clarki utah)*

The Bonneville cutthroat trout is a subspecies of the cutthroat trout native to the Bonneville Basin of Utah, Wyoming, Idaho, and Nevada. Pure Bonneville cutthroat trout are rare throughout their historic habitat, but several populations exist in Utah, including within the RFO. Major threats to this species include habitat loss/alterations, predation by and competition with non-native fishes, and hybridization with non-native fishes, such as the rainbow trout. This species feeds primarily on insects, but large individuals also eat fishes. It can be found in a variety of habitats ranging from high-elevation mountain streams and lakes to low-elevation grassland streams. In all of these habitat types, the Bonneville cutthroat trout requires a functioning stream riparian zone that provides structure, cover, shade, and bank stability.

Colorado River cutthroat trout *(Oncorhynchus clarki pleuriticus)*

This species is a race, or subspecies, of the cutthroat trout that is native to the upper Colorado River drainage of Utah, Wyoming, Colorado, Arizona, and New Mexico. This subspecies is restricted to the upper Colorado River drainage and occurs in headwater streams and mountain lakes of the Uinta, La Sal,

and Abajo Mountains; the Tavaputs Plateau; and the Escalante and Fremont River drainages (Bosworth 2003). UDWR has documented cutthroat trout populations within Sevier, Wayne, and Garfield counties within the planning area (UDWR 2005a).

The Colorado River cutthroat trout eats primarily invertebrates, but adults also eat small fishes. Like other cutthroat trout, the subspecies spawns in streams over gravel substrate in the spring. The cool, clear water of high-elevation streams and lakes is the preferred habitat for Colorado River cutthroat trout (Bosworth 2003).

Threats to the species include land and water use activities such as grazing, mining, and the construction of water impoundments, as well as the introduction of non-native fish. In addition, fragmentation of metapopulations, which affects gene flow and seasonal movements, is thought to be an especially important factor in population declines (Bosworth 2003). UDWR is currently working to restore pure Colorado River cutthroat trout to historic areas in Utah. Since 1999, large numbers of Colorado River cutthroat trout have been raised in hatcheries and then released into lakes in the Uinta Mountains in the northeastern part of the State.

Southern leatherside chub *(Lepidomeda aliciae)*

Recent genetic evidence shows that the leatherside chub, *Gilia copei*, separated into two distinct species—the northern leatherside chub, *Lepidomeda copei*, and the southern leatherside chub, *Lepidomeda aliciae*, whose range includes portions of the RFO. The leatherside chub is a small minnow native to streams and rivers of the southwestern portion of the Bonneville Basin. It was once common throughout its native range but presently is listed as a State sensitive species due to substantial decreases in population levels.

Roundtail chub *(Gilia robusta)*

This species is a fairly large minnow native to the Colorado River system of the western United States. It prefers large rivers and is most often found in murky pools near strong currents in the main-stem Colorado River and tributaries. Locally common in places, the roundtail chub has been reduced in numbers and distribution due to flow alteration and the introduction of exotic fishes. It eats terrestrial and aquatic insects, mollusks, and other invertebrates, fishes, and algae.

Bluehead sucker *(Catostomus discobolus)*

The bluehead sucker is native to parts of Utah, Idaho, Arizona, New Mexico, and Wyoming. Specifically, the species occurs in the upper Colorado River system, the Snake River system, and the Lake Bonneville Basin. In Utah, bluehead suckers have been reduced in numbers and distribution due to stream flow alteration, habitat loss/alteration, and the introduction of non-native fishes. It is a benthic (bottom dwelling) species with a mouth modified to scrape algae from the surface of rocks. Fast-flowing water in high gradient reaches of mountain rivers has been identified as important habitat for this species.

Flannelmouth sucker *(Catostomus latipinnis)*

This species is native to the Colorado River system of the western United States and northern Mexico. In Utah, the species occurs in the main-stem Colorado River and in many of the Colorado's large tributaries. Flannelmouth suckers are usually absent from impoundments. The species prefers large rivers, where it is often found in deep pools of slow-flowing, low-gradient reaches. The sucker is a benthic (bottom dwelling) fish that eats primarily algae. Invertebrates and many types of plant matter are also consumed. Utah flannelmouth sucker populations have recently been reduced in numbers and distribution, primarily due to flow alteration, habitat loss/alteration, and the introduction of non-native fishes.

Plants

Rabbit Valley gilia *(Gilia cespitosa or Alicella cespitosa)*

Rabbit Valley gilia (also known as Wonderland Alice-flower) is a federal candidate for listing under the ESA and occurs in Wayne County. Rabbit Valley gilia is primarily associated with Navajo Sandstone and to a lesser extent, the Kayenta and Wingate Formations. Growing in sand-filled crevices, sand pockets, and on detrital slopes, it is found in open pinyon-juniper woodlands, often mixed with mountain brush, sagebrush, or ponderosa pine, at elevations ranging from 5,198 to 8,997 feet (Clark and Clark 1999). Rabbit Valley gilia is known from 15 populations scattered over a distance of about 19 miles near the Fremont River from the northern portion of the Waterpocket Fold westward to Rabbit Valley in Wayne County, an area locally known as Wayne Wonderland. Threats to the population include plant collection and trampling associated with recreation and livestock grazing (NatureServe 2004).

Utah phacelia *(Phacelia utahensis)*

This central Utah endemic species occurs in portions of Sanpete and Sevier counties. It is found on often-precipitous, barren slopes of the Arapien Shale Formation. The plant grows in desert shrub and pinyon-juniper woodland communities. Alder-leaf mountain mahogany, shadscale, and Utah greasebush communities are also known to contain populations. The plant grows at elevations ranging from 5,500 to 6,200 feet. Evidence of gypsum mining has been observed over much of the habitat, and the plants were never observed occupying disturbed locations. Livestock grazing and off-highway vehicle use are present, but due to the often steep habitat, are not a concern at all locations. The recent discovery of oil in the Sevier Valley may add another potential impact to this plant's habitat (Utah Native Plant Society 2007, UDWR 2005d).

Basalt (or Silver) milkvetch *(Astragalus subcinereus var. basalticus)*

The basalt milkvetch is found in eastern Sevier and western Garfield and Emery counties in Utah. It prefers pinyon-juniper woodland and ponderosa pine communities on igneous gravels between 4,500 and 8,000 feet in elevation (Utah Native Plant Society 2007).

Pinnate spring parsley *(Cymopterus beckii)*

This species is found in pinyon-juniper woodland, mountain brush, ponderosa pine/Manzanita, conifer/oak, and Douglas fir communities in sandy or stony soils. It is often found in rock crevices and near cliff bases on north and east exposures between 5,600 and 7,500 feet in elevation. It is endemic to San Juan and Wayne counties in Utah and Navajo Tribal Lands in Arizona (Utah Native Plant Society 2007).

Creutzfeldt cryptanth (Cryptantha creutzfeldtii)

This species is endemic to central Utah in Carbon, Emery, and Sevier counties. It inhabits shadscale and mat *Atriplex* communities on the Mancos shale formation between 5,250 and 6,500 feet. It flowers from late April through June (Utah Native Plant Society 2007).

Hole-in-the-Rock prairie-clover *(Dalea flavescens var. epica)*

This species is endemic to Utah in Carbon, Emery, Garfield, Kane, San Juan, and Wayne counties. It grows on sandstone bedrock and sandy areas in blackbrush and mixed desert shrub communities between 4,700 and 5,000 feet in elevation (Utah Native Plant Society 2007).

Cronquist wild buckwheat *(Eriogonium corymbosum var. cronquistii)*

Cronquist wild buckwheat is endemic to the Henry Mountains in Garfield and Wayne counties in Utah. It is found almost entirely on public lands administered by the BLM RFO. The species prefers pinyon, *Holodiscus*, rabbitbrush, mountain brush, and rock-spirea communities. It occurs on steep talus slopes between 8,800 and 8,900 feet in elevation (Utah Native Plant Society 2007).

Smith (or Flat Tops) wild buckwheat *(Eriogonum corymbosum var. smithii)*

This species is located in the San Rafael Desert portion of Emery and Wayne counties in Utah. It is endemic to the Colorado Plateau. The plant is a perennial shrub with bright yellow flowers and shiny green leaves. It is found in purple sage, matchweed, Ephedra-Indian rice grass, desert shrub, and rabbitbrush communities on the Entrada Formation and on stabilized sand dunes between 4,500 and 5,600 feet in elevation. Livestock currently graze in the habitat of this species but do not appear to be a threat to the plant. The potential also exists for oil and gas related activity to occur within the habitat of this species (Utah Native Plant Society 2007; UDWR 2007).

Utah spurge *(Euphorbia nephradenia)*

Endemic to the Colorado Plateau, the Utah spurge is found in Emery, Garfield, Kane, and Wayne counties. It is found in mat saltbush, blackbrush, Ephedra, mixed sandy desert shrub, and grassland communities on dark clay hills, blown sand, and stabilized dunes mainly on Tropic Shale and Entrada Formations between 3,800 and 4,800 feet in elevation (Utah Native Plant Society 2007).

Cataract gilia *(Gilia latifolia var. imperialis)*

Cataract gilia is endemic to Emery, Garfield, Grand, Kane, San Juan, and Wayne counties, Utah. It is found in shadscale and other mixed desert shrub communities, especially in wash bottoms and at the bases of ledges between 3,800 and 5,200 feet in elevation (Utah Native Plant Society 2007).

Mussentuchit gilia *(Gilia tenuis)*

This species is known from 7 locations in Emery and Sevier counties (NatureServe 2004 and Utah Native Plant Society 2004). The species is restricted to a discontinuous stretch of habitat of sandstone outcrops and sandy slopes in association with mountain brush, pinyon-juniper woodlands, and cushion plants (NatureServe 2004). Often Mussentuchit gilia is located on material derived from the Curtis Formation and the Dakota and Navajo sandstones, between 5,198 and 7,117 feet in elevation (Welsh *et al*. 1993 and Utah Native Plant Society 2004). The number of plants is not recorded for the population located within the planning area, and no threats have been identified to either the populations or habitat (UNHP 2004, NatureServe 2004).

Alcove bog-orchid *(Habenaria zothecina)*

Alcove bog-orchid is located in Emery, Garfield, Grand, San Juan, and Uintah counties in Utah and in Arizona and Colorado. It is found in seeps, hanging gardens, and moist stream banks in mixed desert shrub, pinyon-juniper woodland, and oak brush communities between 4,000 and 6,200 feet in elevation (Utah Native Plant Society 2007).

Greenwood's goldenbush *(Haplopappus lignumviridis)*

The habitat of this very rare species is restricted to riparian areas with willows, nettles, and *Conyza* in Sevier County, Utah. It is found at about 6,200 feet in elevation (Utah Native Plant Society 2007).

Claron pepperplant *(Lepidium montanum var. claronense)*

The Claron pepperplant is endemic to the Paunsaugunt and Table Cliff Plateau in Garfield, Kane, and Piute counties in Utah. It is restricted to sagebrush, pinyon-juniper woodland communities, and ponderosa pine/bristlecone pine communities on the Claron member of the Wasatch Limestone Formation and other fine textured substrates between 6,400 and 8,000 feet in elevation (Utah Native Plant Society 2007).

Entrada pinkrush (Lygodesmia grandiflora var. entrada)

This species is endemic to Emery, Grand, and San Juan counties with potential habitat within the RFO area. It occurs in mixed desert shrub and juniper communities between 4,400 and 4,800 feet in elevation and flowers in June (Utah Native Plant Society 2007).

Arapien blazingstar (*Mentzelia argillosa*)

The Arapien blazingstar is a rare plant endemic to the Arapien shale in Sevier and Sanpete counties. It occurs at elevations ranging from about 5,600 to 6,300 feet. It is sympatric with *Phacelia utahensis* and *Townsendia jonesii* var. *lutea*, both BLM sensitive species.

Jones' indigo-bush (*Psorothamnus polydenius jonesii)*

This species is endemic to Emery, Grand, and Wayne counties. It inhabits shadscale, mat-saltbush, Ephedra, and galleta communities on the Mancos shale formation (Blue Gate and Tununk members) and less commonly sandy terrace gravels. It occurs at elevations ranging from 4,200 to 4,900 feet and flowers late May–July (Utah Native Plant Society 2007).

Jane's globemallow *(Sphaeralcea janeae)*

This rare species is endemic to Wayne and San Juan counties in Utah. It prefers warm and salt desert shrub communities on the White Rim and Organ Rock members of the Cutler Formation between 4,000 and 4,600 feet in elevation (Utah Native Plant Society 2007).

Psoralea globemallow *(Sphaeralcea psoraloides)*

This species is endemic to the Colorado Plateau and is found on the southeastern footslopes of the San Rafael Swell in Wayne and Emery counties, Utah. It is typically found in *Zuckia-Ephedra*, shadscale, *Eriogonum*, *Lepidium*, and pinyon-juniper woodland communities. Soil types on which the psoralea globemallow is found include saline and gypsiferous Mancos Shale, Buckhorn Conglomerate, Curtis sandstone, Entrada siltstone, Carmel, and Kaibab Limestone between 4,000 and 6,300 feet in elevation. Researchers visiting populations of this species have noted OHV use, grazing, recreation, exotic weed encroachment, mining, and urbanization occurring within the habitat. However, the species appears to be stable at this time (Utah Native Plant Society 2007, UDWR 2005d).

Alpine greenthread *(Thelesperma subnudum var. alpinum also known as Thelesperma windhamii)*

The alpine greenthread is a rare species endemic to portions of Wayne County, Utah. It occurs in pinyon-juniper communities, mountain brush, and western bristlecone pine communities. The plant grows in sandy soil pockets, cracks of slickrock, and on ledges and clay flats on Carmel Limestone and Navajo Sandstone between 6,000 and 8,000 feet in elevation. The known populations of this species are fairly isolated (Utah Native Plant Society 2007; UDWR 2005d).

Sigurd townsendia *(Townsendia jonesii var. lutea)*

This very rare species is found in Juab, Piute, Sanpete, and Sevier counties in Utah. Its habitat is salt desert, mixed desert shrub, and juniper-sagebrush communities on Arapien shale and clays in volcanic rubble at 3,500 to 6,300 feet elevation (Utah Native Plant Society 2007).

3.3.9 Fish and Wildlife

The BLM manages public lands to provide habitat for fish and wildlife. The diverse ecosystems and mosaic landscapes of the lands managed by the RFO provide habitat for more than 600 species of fish and wildlife. Fish and wildlife habitat are managed according to principles outlined by *Utah Fish and Wildlife 2000* (BLM 1993b). The BLM implements this general guidance through specific management actions associated with species located in the public lands managed by the RFO.

The BLM manages wildlife habitat, and the UDWR manages wildlife populations. To the extent practicable, the BLM collaborates with UDWR to achieve the habitat management goals and objectives of the various UDWR Wildlife Management Unit Plans, as well as species-specific management plans, by providing appropriate quantities and quality of habitats on public lands, consistent with the principles of multiple-use management. These habitats reflect the influence of various past and ongoing human activities and disturbances, resulting in significant increases in some species populations, declines in others, and the modification of large blocks of habitat. The habitats and the wildlife species that rely on them rarely exist solely on BLM lands and often extend across administrative boundaries to other federal, state, and private lands.

Fish and wildlife species can be broadly defined in 2 management categories that reflect preferences in public interest. Some species, commonly called game species, are economically important for hunting, fishing, and wildlife viewing opportunities. Others that do not have direct economic importance for hunting and fishing are referred to as non-game species. Both categories have economic importance that varies locally and nationally. Species not specifically discussed in this plan are also important and contribute to the diversity and health of plant and animal communities on public land. Many species fill ecological roles that are important but not fully understood.

3.3.9.1 Fish and Fisheries Habitat

Fisheries habitat includes perennial and intermittent streams and flat water (e.g., lakes and reservoirs) that support fish through at least a portion of the year. The condition of fisheries habitat is related to riparian habitat and stream channel characteristics. Riparian vegetation moderates water temperatures and provides bank structures that reduce erosion and provide overhead vegetation cover for fish. Intact riparian communities also serve to slow overland flow, capture sediments, and provide a filter that enhances water quality. Water quality, especially factors such as sediment, temperature, and dissolved oxygen, also greatly affects fisheries habitat.

Streams and lakes in the RFO provide habitat for at least 30 species of warm- and cool-to cold-water fish species, with 18 of these considered game fish (Sigler and Sigler 1996). Past stocking efforts have established many non-native fish species in streams, lakes, and reservoirs. Aquatic invertebrates and amphibians are integral components of all fish communities.

The factors limiting or affecting fish habitat in the RFO include excess siltation, elevated water temperatures, stream dewatering, riparian areas in less than PFC, livestock impacts, and past mining practices. Factors limiting or affecting native fish production include competition and predation from non-native species, stream dewatering, hybridization, fish loss through irrigation diversions, excess siltation, and isolation of populations.

3.3.9.2 Wildlife and Wildlife Habitat

Wildlife habitat can be segregated into 7 types: desert shrub, sagebrush steppe, pinyon-juniper woodland, forested, riparian/wetland, aspen, and non-vegetated (cliff talus). These habitat types are used as a basis

for describing existing conditions, focusing on a broader scale approach as opposed to single-species management.

Livestock grazing, fire suppression, development patterns, natural conditions, and introduced plant species have influenced the condition of the habitats. When management focuses on habitat condition and composition rather than on individual species, a more ecological effect is achieved on wildlife species than when focused on an individual species. Disturbances enhance habitat for some species but limit opportunities for others. Generally, disturbances promote use by mobile species or species that tolerate a broad range of habitat conditions. The availability of habitat may vary during the year as a result of elevation, aspect, and proximity of disturbance. Habitat use is also limited by wildlife species' different levels of social tolerance and by learned or inherent behavior. These factors may limit movement of wildlife species into new habitats even if the habitat appears suitable for the species' needs.

Wildlife habitat needs vary significantly by species. It is generally true that healthy and sustainable wildlife populations can be supported where there is a diverse mix of vegetation communities to supply structure, forage, cover, and other specific habitat requirements.

Desert Shrub

Desert shrub includes numerous upland vegetation communities with a shrubland component and a variable understory of grass and forbs. Desert shrub contains a large number of reptile species. A variety of other wildlife occupies salt desert habitats. Herbaceous plants are vital to the majority of all wildlife species because they provide food, cover, and structure. Shrub cover helps wildlife survive the rigors of summer heat and winter cold. It supplies browse, seeds, and cover for birds and small and large mammals. Intermingled areas of desert grasslands add diversity to vegetation and habitat structure in desert shrub communities.

Sagebrush Steppe

Sagebrush habitat is prevalent in the western and central portions of the RFO. At mid to lower elevations, Wyoming big sagebrush is the dominant vegetation type, providing important winter habitat for highly mobile wildlife species (e.g., mule deer, pronghorn, and Greater sage-grouse) and localized yearlong habitat for sagebrush-obligate species (e.g., pygmy rabbit). Sagebrush also provides crucial breeding, nesting, and brood-rearing habitat for these species. Intermingled occurrences of grasslands and several low sages add to the diversity of vegetation and habitat structure. Sagebrush-obligate species are restricted to sagebrush habitats during the breeding season or year round, and near-obligate species occur in both sagebrush and grassland habitats. As a consequence of the regional losses of sagebrush communities and the number of sagebrush-obligate wildlife, maintenance and improvement of existing sagebrush habitat are crucial for community structure and diversity and for providing critical habitat for obligate species.

Pinyon-Juniper Woodlands

Pinyon-juniper woodlands are widely dispersed and have expanded into sagebrush and other vegetation communities. Pinyon-juniper woodlands provide some wildlife habitat. Although understory vegetation is reduced beneath pinyon-juniper stands, pinyon-juniper woodlands provide greater structural diversity than desert shrub or sagebrush steppe shrubland habitats.

Forested Areas

Coniferous habitats are a small but important habitat component within the RFO and are primarily located along national forest boundaries and in the Henry Mountains. Forested habitats, which provide security areas (e.g., hiding cover) for big game species, can provide important linkage corridors for wildlife movement between other seasonal habitats.

Riparian Ecosystems

Riparian habitats are crucial components in the landscape. They serve as important use areas for wildlife in providing various life-cycle requirements such as foraging, nesting, roosting, and hiding cover, as well as travel corridors for numerous highly mobile species. Usually a high degree of plant diversity occurs along riparian corridors, exhibiting variable density and composition, allowing both openness and ground cover. Invasive species, such as tamarisk, are degrading the health of riparian systems, shifting the systems to a vegetation monoculture.

Aspen

Aspen stands provide habitat for many wildlife species. Many predaceous birds are adapted to aspen forest and the adjacent open brush, meadows, and grasslands. Aspen ecosystems provide cover, calving, and fawning habitat for big game, and nesting habitat for migratory birds.

Non-Vegetated (Cliff Talus)

Talus slopes are accumulations of angular rock debris at the bases of cliffs or steep slopes. Talus provides wildlife species with basking sites and crevices for hiding. Slopes with large boulders provide caves that may be large enough for a species such as bobcat to occupy. Cliffs are faces of vertical exposed rock that sometimes have a talus slope at their base. Several raptor species and non-perching birds, such as black swifts, use cliff and talus areas for nesting and brood-rearing habitat. Prairie falcons generally nest on rock outcrops and cliffs that range from 30 to 400 feet high. Canyon and rock wrens nest in the fractured talus slope below cliff faces, particularly in areas interspersed with open, patchy forests of ponderosa pine, Douglas fir, and sagebrush steppe communities.

3.3.9.3 Wildlife Species of Interest

Wildlife species of interest include big game animals, raptors, upland game birds, and other species. Big game populations are managed cooperatively by the BLM and UDWR based on habitat condition, long-term vegetative trends, annual monitoring of wildlife utilization levels, and the desired age class of animals produced in each Wildlife Management Unit. UDWR establishes Wildlife Management Unit boundaries to encompass the seasonal habitat requirements of large, free-roaming wildlife species, and they are frequently bounded by such physical features as ridgetops or drainages, or artificial features such as major roads or highways. Boundaries of Wildlife Management Units rarely match the administrative boundary of the RFO.

Seasonal habitats are mapped in the GIS and represent an outside perimeter within which a particular seasonal use could be expected to occur by a particular species. However, the mapping is not precise because distribution varies annually as a result of weather, forage availability, and population size and distribution. Some areas do not lend themselves to a particular use as a result of topography, different vegetation, or disturbances that are too small to map on a broad scale (e.g., north slopes on winter ranges, forested patches in sagebrush). The RFO includes all or portions of the following UDWR Wildlife Management Units—

- Beaver
- Central Mountains, Manti South
- Fillmore
- Henry Mountains
- Monroe
- Mount Dutton
- Plateau Boulder
- Plateau Fishlake
- Plateau Thousand Lake

- San Rafael.

Game Wildlife Species

Crucial habitats for big game species are included within the RFO (Maps 3-5, 3-6, and 3-7). Crucial-value habitat is any range or habitat component that directly limits a community from reproducing or maintaining a certain population level over the long term. Moderate-value and low-value habitat is abundant in the planning area, and includes any particular habitat that is common or of intermediate importance. Wildlife may be displaced due to development activities in these habitats.

Bison

The Henry Mountains are the habitat of the only free-roaming and huntable herd of American bison on public land in the 48 contiguous United States. The herd was transplanted to the San Rafael Desert in the 1940s and migrated into the Henry Mountains in the 1960s (Map 3-5). Bison are grazers, feeding mainly on grasses and other vegetation. Although bison typically give birth in spring, young may be born as late as midsummer. An annual hunt is held to maintain a harvest population of about 275 animals. Conflicts with livestock and bison grazing occur on allotments where both are present. Drought increases the potential for conflict between livestock and bison.

Bighorn Sheep

Desert bighorn sheep are found in the Dirty Devil portion of the San Rafael Wildlife Management Unit. Desert bighorn sheep are considered to be yearlong residents of their range—they do not have seasonal ranges like mule deer and elk (Map 3-5). Bighorn sheep prefer very open vegetation types, such as low shrub, grassland, and other treeless types typically associated with steep talus and rubble slopes. Bighorn sheep diets comprise a variety of shrubs, forbs, and grasses. Bighorn sheep lambing occurs on steep talus slopes, typically within 1 to 2 miles of reliable water sources.

Bighorn sheep are extremely vulnerable to a variety of viral and bacterial diseases carried by livestock, principally by domestic sheep. In some cases reported in the literature, exposures to some of these diseases have resulted in the decimation of entire bighorn populations. The diseases are transmitted in numerous ways, including nose-to-nose contact and wet soils associated with areas of concentrated use, such as stock watering ponds. The BLM has adopted guidelines for domestic sheep grazing in or near bighorn sheep habitat to prevent the spread of disease.

Management of bighorn sheep is guided by 3 herd management plans and guidelines: The *Utah BLM Statewide Desert Bighorn Sheep Management Plan* (BLM 1986), *Revised Guidelines for Domestic Sheep and Goat Management in Native Wild Sheep Habitats* (BLM 1998a), and the *Utah Bighorn Sheep Statewide Management Plan* (UDWR 1999). Additional guidance is found in the *Henry Mountains Desert Bighorn Sheep Habitat Management Plan* (BLM 1990a).

Pronghorn

There are 5 Wildlife Management Units that contain pronghorn habitat within the planning area (San Rafael, Henry Mountains, Plateau, Monroe, and a portion of Mt. Dutton). Pronghorn prefer very open vegetative habitat types, such as salt desert shrub, grassland, and other treeless types. Typically, pronghorn avoid slopes greater than 20 percent. Pronghorn fawning occurs throughout the range of the species (Map 3-5). Pronghorn diets comprise a variety of forbs, shrubs, and grasses. Forbs are of particular importance during spring and summer, and shrubs are more important during the winter.

Mule Deer

There are 6 mule deer Wildlife Management Units that occur in the planning area. Mule deer are migratory, moving seasonally between summer and winter ranges (Map 3-6). Mule deer usually summer at high elevations and winter at low elevations. Their diet consists largely of sagebrush, primarily

Wyoming sagebrush. Shrubs such as true mountain mahogany, fourwing saltbush, and antelope bitterbrush are important winter forage species. Mule deer fawn during the spring on their migration back to their summer range.

Mule deer have a high degree of fidelity to specific winter ranges, where high population densities concentrate on relatively small areas. Because of the relatively small winter range area, high population densities, and the natural stress of winter survival, mule deer are vulnerable to stress caused by human activity in winter range areas, such as antler hunting and other recreational activities. Mule deer are displaced an average of 600 feet from areas of human activity.

Elk

The planning area includes portions of 4 elk Wildlife Management Units: Plateau, Monroe, Beaver, and Mt. Dutton (Map 3-7). Elk are migratory, moving seasonally between summer and winter ranges. They summer at higher elevation ranges in aspen and forested habitats, where their diet consists primarily of grasses and forbs. Elk calve during late spring and early summer in aspen-mountain browse, intermixed vegetation types. Elk winter at mid-to-lower elevation ranges, occupying the sagebrush and woodland habitat types and congregating in herds of 50 to 200 or more. Human activity in elk winter range intensifies the natural stress of winter survival.

Black Bear

Black bear is currently the only bear species inhabiting Utah. Black bears are native to Utah and are fairly common. In the planning area, black bears are present in Wayne and Garfield counties, where they can be found primarily in large forested areas.

Cougar

Cougar, or mountain lions, are found statewide in Utah, occupying habitat types ranging from rugged desert areas to above the timberline. The species is fairly common throughout Utah, but individuals are rarely seen because of their secretive nature. Seasonally, their movements follow their main prey: mule deer. Cougar will also feed on rabbits, elk, or other animals, but about 80 percent of their diet consists of deer. Cougars are active year-round, during day and night, although most activity occurs at dawn and dusk. They are hunted on a limited and closely monitored basis in Utah.

Furbearers

Several furbearer species are found in the planning area. Furbearers, as defined by UDWR, include bobcats, raccoons, badgers, weasels, red fox, and beavers. Red fox are found throughout the planning area, and numbers are relatively high. Bobcats are fairly common in Utah; however, they are rarely seen due to their secretive nature.

Upland Game Birds

The lands managed by the RFO provide important migration, nesting, and winter habitats for upland game birds. Upland species include Greater sage-grouse, blue grouse, pheasants, and quail. (Greater sage-grouse are discussed in more detail in Section 3.1.1, Special Status Species.) Upland species feed frequently on upland grasses and forbs in grassy fields and meadows, where such vegetation is succulent and sufficiently open to enable rapid flight and avoidance of harboring predators. Such habitats support upland game birds year round.

Other Non-game Species

Information on small mammals, bats, reptiles, and amphibians is lacking. Databases maintained by the Utah Natural Heritage Program document general occurrences and potential for many of these groups of wildlife, but site-specific inventories have not been conducted for most of the RFO. However, as

inventories are conducted, new occurrences and range extensions are being discovered, which emphasizes the need for more comprehensive work.

3.3.9.4 Migratory Birds

Migratory birds have been protected by treaty (with Great Britain) since 1916 and by law under the MBTA since 1918. In EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds, signed by President Clinton in 2001, federal agencies were directed to "design migratory bird habitat and population conservation principles, measures, and practices into agency plans and planning processes…." Bird Habitat Conservation Areas (BHCA) were identified in an effort to focus cooperative migratory bird habitat enhancement or restoration efforts in these important areas. The BHCAs are not special designations and do not require additional regulation. In the *Coordinated Implementation Plan for Bird Conservation in Utah* (IWJV 2005), 3 BHCAs were identified on lands managed by the RFO:

- **BHCA 30:** Sevier Bridge/Chicken Creek Reservoirs—open water with large marsh areas
- **BHCA 43:** Parker Mountain—sagebrush-steppe habitat
- **BHCA 51:** Henry Mountains (north of Mount Ellen)—mountain riparian habitat.

Neotropical migratory birds are found in all habitats within the planning area (Parrish *et al.* 2002). These birds include a diverse array of species, such as hummingbirds, finches, flycatchers, warblers, thrushes, and orioles. Most of these birds are summer residents that use habitats ranging from lower elevation wetlands to high-elevation forests for breeding and raising young. Some species, such as the American robin and mallard, are migratory, but small populations may be present yearlong depending on seasonal conditions. Winter residents, such as rough-legged hawk, snow buntings, and rosy-crowned gray finches, arrive from arctic breeding grounds or high-elevation, alpine areas to use winter habitats in lower elevation foothills and major river valleys, seasonally replacing summer residents.

The following list includes birds on the *USFWS Birds of Conservation Concern (BCC) 2002* list and the *Utah Partners in Flight (PIF) Priority Species for Conservation* that may inhabit the RFO area based on RFO data and information in the UDWR's Utah Conservation Data Center (http://dwrcdc.nr.utah.gov/ucdc/).

Table 3-17. Birds of Conservation Concern within the Richfield Field Office

Common Name	Scientific Name	BCC List[1]	PIF List[2]
Marbled Godwit	*Limosa fedoa*	X	
Wilson's Phalarope	*Phalaropus tricolor*	X	
American Avocet	*Recurvirostra americana*	X	X
Solitary Sandpiper	*Tringa solitaria*	X	
Long-billed Curlew	*Numenius americanus*	X	X
American White Pelican	*Pelecanus erythrorhynchos*		X
Black-necked Stilt	*Himantopus mexicanus*		X
Western Yellow-billed Cuckoo	*Coccyzus americanus*	X	X
Black Swift	*Cypseloides niger*	X	X
Broad-tailed Hummingbird	*Selasphorus platycercus*		X
Golden Eagle	*Aquila chrysaetos*	X	

Common Name	Scientific Name	BCC List[1]	PIF List[2]
Peregrine Falcon	*Falco peregrinus*	X	
Prairie Falcon	*Falco mexicanus*	X	
Swainson's Hawk	*Buteo swainsonii*	X	
Ferruginous Hawk	*Buteo regalis*	X	X
Northern Harrier	*Circus cyaneus*	X	
Burrowing Owl	*Anthene cunicularium*	X	
Flammulated Owl	*Otus flammeolus*	X	
Short-eared Owl	*Asio flammeus*	X	
Loggerhead Shrike	*Lanius ludovicianus*	X	
Pinyon Jay	*Gymnorhinus cyancephalus*	X	
Greater Sage-grouse	*Centrocercus urophasianus*	X	X
Gambel's Quail	*Callipepla gambelii*		X
Lewis's Woodpecker	*Melanerpes lewis*	X	X
Williamson's Sapsucker	*Sphyrapicus thyroideus*	X	
American Three-toed Woodpecker	*Picoides dorsalis*		X
Virginia's Warbler	*Vermivora virginiae*	X	X
Grace's Warbler	*Dendroica graciae*	X	
Black-throated Gray Warbler	*Dendroica nigrescens*	X	X
Black Rosy-finch	*Leucosticte atrata*		X
Gray Vireo	*Vireo vicinior*	X	X
Sage Sparrow	*Amphispiza belli nevadensis*	X	X
Brewer's Sparrow	*Spizella breweri*	X	X

Notes:
1—Based on bird lists for Bird Conservation Regions 16 (Colorado Plateau) and 9 (Great Basin), which cover the RFO area.
2—The PIF list of 24 priority species for conservation actions can be found in the document entitled *Coordinated Implementation Plan for Bird Conservation in Utah*, prepared by Utah Steering Committee, Intermountain West Joint Venture, 2005 (http://iwjv.org/Images/UTPlan2005.pdf).

3.3.9.5 Raptors

Raptor management on public lands in Utah is guided by the use of best management practices (BMP) (Appendix 10), which are BLM-specific recommendations for implementation of the USFWS, Utah Field Office's *Guidelines for Raptor Protection from Human and Land Use Disturbances*. The guidelines were originally developed by USFWS in 1999 and were updated during 2002 to reflect changes brought about by court decisions, policy changes, and new EOs. The guidelines were provided in an attempt to ensure project compatibility with the biological requirements of raptors and to encourage an ecosystem approach to raptor management.

Raptors have very specific requirements for nesting territories, including vegetation structure and diversity. Requirements for physiographic features (e.g., elevation, slope), as well as prey availability, vary by species. Raptors typically reuse the same nesting territory for years, and alterations to these areas could reduce the viability of raptor populations. Threats to raptors include loss of habitat, reduction in

food supply, and disturbance during nesting. Habitat loss from changing land use to industrial, agricultural, or recreational could reduce available food supply or alter nesting territories. Each raptor nest, its offspring, and supporting habitat are considered important to the long-term viability of raptor populations. Changes in vegetation structure and diversity could reduce the areas meeting nest site requirements.

Generally, courtship, nest construction, incubation, and early brooding are considered higher risk periods during which adults are easily prone to temporarily or permanently abandoning nests in response to disturbance. This may result in abandonment of eggs or young. Loss or alteration of habitat for any raptor species can also result in a loss of or change in the raptor prey base or historical nesting territories (USFWS 2002e).

3.3.10 Wild Horses and Burros

The goal of the Wild and Free-Roaming Horse and Burro Act is to manage wild horses and burros, "in the area where presently [1971] found as an integral part of the natural system of the public lands." The Act and subsequent regulations direct that wild horses and burros be managed to ensure a thriving natural ecological balance with the minimum feasible management required to maintain the populations. The management of wild horse and burro populations to maintain a sufficient size to be genetically viable is an important aspect of this goal. Some management decisions could affect the viability of wild horse or burro populations. Long-term intensive management actions on burro populations, that fail to meet the minimum feasible management regulations, would be noted as an impact. Following passage of the Wild, Free-Roaming Horse and Burro Act of 1971, BLM identified 2 wild horse and burro management areas in the planning area: the Robbers Roost Herd Management Area (HMA) for wild horses and the Canyonlands HMA for wild burros.

3.3.10.1 Robbers Roost Herd Management Area

The Robbers Roost HMA straddles the Wayne-Emery County line. Vegetation in the area is largely desert grassland, with desert shrub interspersed throughout. As is common throughout the area, the lack of water limits the habitat available for horses. Management intervention is required to maintain a viable population level of 15 to 25 horses. In 2003, it was estimated that there were about 17 horses in the HMA.

A 1975 agreement between the Moab and Richfield district managers directed the Moab District to administer the Robbers Roost HMA. This agreement was updated in 1995, again directing that the Moab District, now part of the Price Field Office (FO), manage the wild horses within the HMA. Thus, the management of and planning for the Robbers Roost HMA is the responsibility of the Price FO and is consequently not addressed in this PRMP/FEIS.

3.3.10.2 Canyonlands Herd Management Area

The Canyonlands HMA is more than 89,000 acres, including several State of Utah parcels. It is located in eastern Wayne County, adjacent to Glen Canyon National Recreation Area on the east and the Horseshoe Canyon unit of Canyonlands National Park on the west. The HMA overlaps portions of the French Spring/Happy Canyon WSA, Horseshoe Canyon South WSA, Horseshoe Canyon North WSA, and Dirty Devil WSA. Vegetation in the area is a mix of desert grasses and desert shrub, although areas with deeper soils support sagebrush and juniper.

Existing planning allocates forage for fewer than 20 burros. However, a recent grazing use adjustment on a portion of a grazing permit and preference has resulted in additional forage for burros and has eliminated most competition with livestock for habitat resources, such as forage and water on the HMA. Throughout the area, the lack of water resources limits the habitat available for burros. Current herd management includes regular inventories to monitor burro numbers. Data gathering in the Canyonlands wild burro herd has historically been aerial and on-the-ground. The most recent inventory of the Canyonlands HMA identified nearly 60 burros. An appropriate management level of 60 to 100 burros is required to maintain a viable herd unit. The isolated and remote location of this burro HMA makes extensive management intervention and monitoring difficult.

The burros of the Canyonlands HMA are unique in that pinto coloration, usually rare in wild burros, predominates. The remote nature of the Canyonlands HMA, coupled with the rough terrain, limit opportunities for the public to view these unique animals.

3.3.11 Fire and Fuels Management

Fire is a natural phenomenon. Vegetation communities in the planning area have adapted to the presence or absence of wildland fire over several thousand years. Geographic, topographic, elevational, and climatic variances throughout the planning area have resulted in an array of conditions in which fire has historically (from 200 to 400 years ago) affected vegetation differently. Consequently, forests, woodlands, and rangelands throughout the planning area have adapted to fire. In addition to natural fire regimes, many vegetation communities were affected by Native American use of fire to manipulate the environment (Williams 2003). Therefore, the role of anthropogenic (human-caused) fires cannot be separated from the role of natural fires for at least the last 10,000 years.

Research has shown that many of the forest, woodland, and rangeland ecosystems in the planning area are not functioning properly. Vegetation communities are considered as functioning properly when they can withstand and/or recover from fire naturally. Appendix 6 provides detailed information concerning the fire ecology of each major vegetation cover type potentially affected by the decisions made in this Proposed RMP/Final EIS. The historic fire-return intervals are identified, as are the responses to fire disturbance of each cover type. Appendix 6 also includes information about the general condition cover type and departure from historic conditions.

3.3.11.1 Wildland Fire Occurrence

Studies of fire-scarred trees in the Henry Mountains and national forest lands within the planning area indicate that before European settlement, fires burned the areas in a relatively consistent pattern. Tree rings from ponderosa pines in a predominantly Douglas-fir stand indicated that the area burned an average of every 19 years (Bartos and Campbell 1998). Note that this does not indicate that the entire planning area burned this regularly. However, areas of similar vegetation types would have been adapted to similar fire intervals.

Yearly wildfire occurrence data for the RFO is available from 1979 to 2003. (Note: Earlier data is for the old Richfield District, which encompassed what is now both the Richfield and Fillmore FOs.) Figure 3-16 lists the yearly number of wildfires and acres burned over this time. As displayed in Figure 3-17, most wildfires (81 percent) in the RFO occur from June through August. Figure 3-18 displays the size distribution of the 300 wildfires since 1979.

Figure 3-19 illustrates the distribution of the 300 wildfires by cause. Approximately 76 percent of the wildfires in the RFO were ignited by lightning.

Figure 3-16. Richfield Planning Area Wildfires and Acreages (1979–2003)

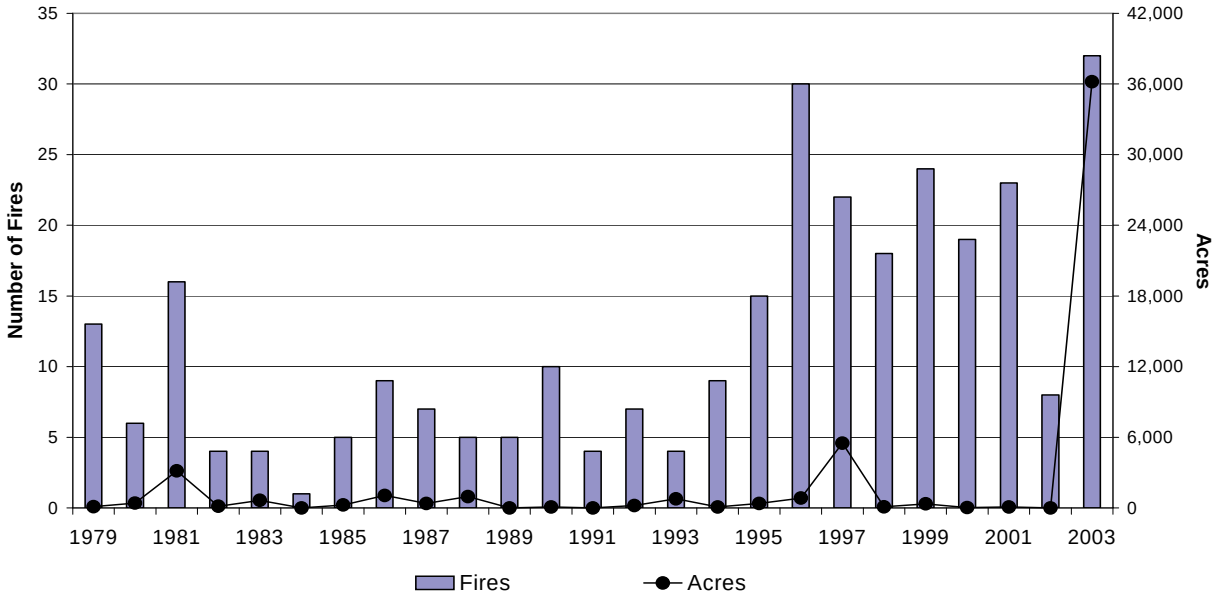


Figure 3-17. Richfield Field Office Wildfire Occurrence by Month (1979–2003)

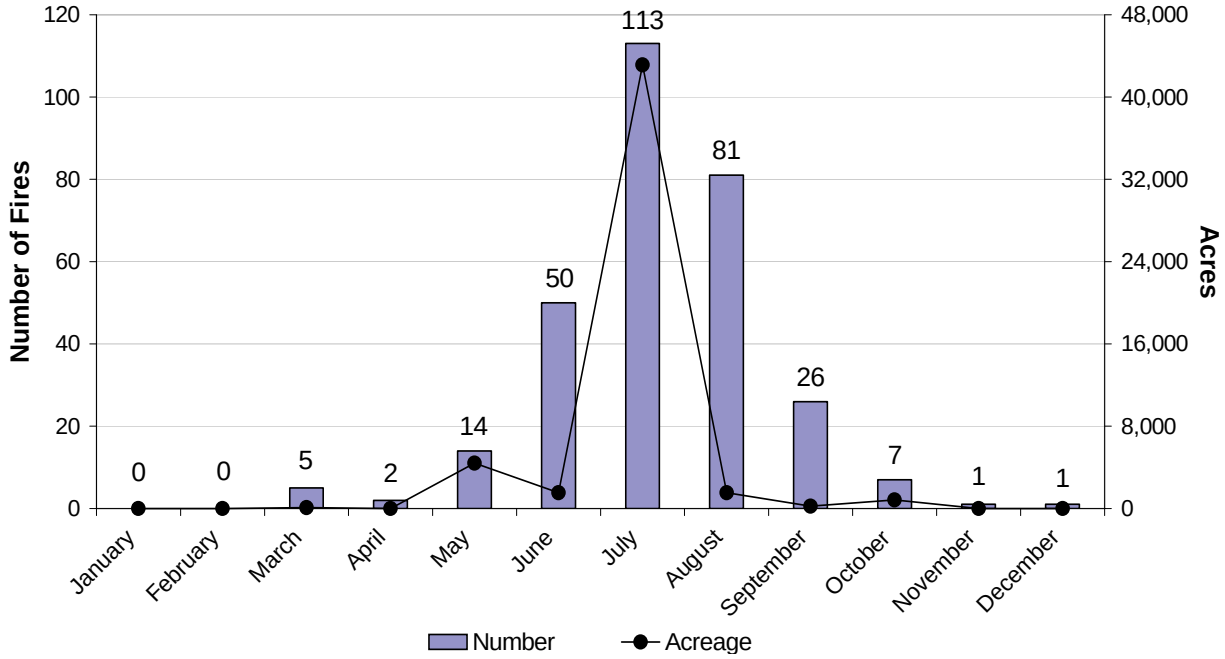


Figure 3-18. Richfield Field Office Wildfires by Size (1979–2003)

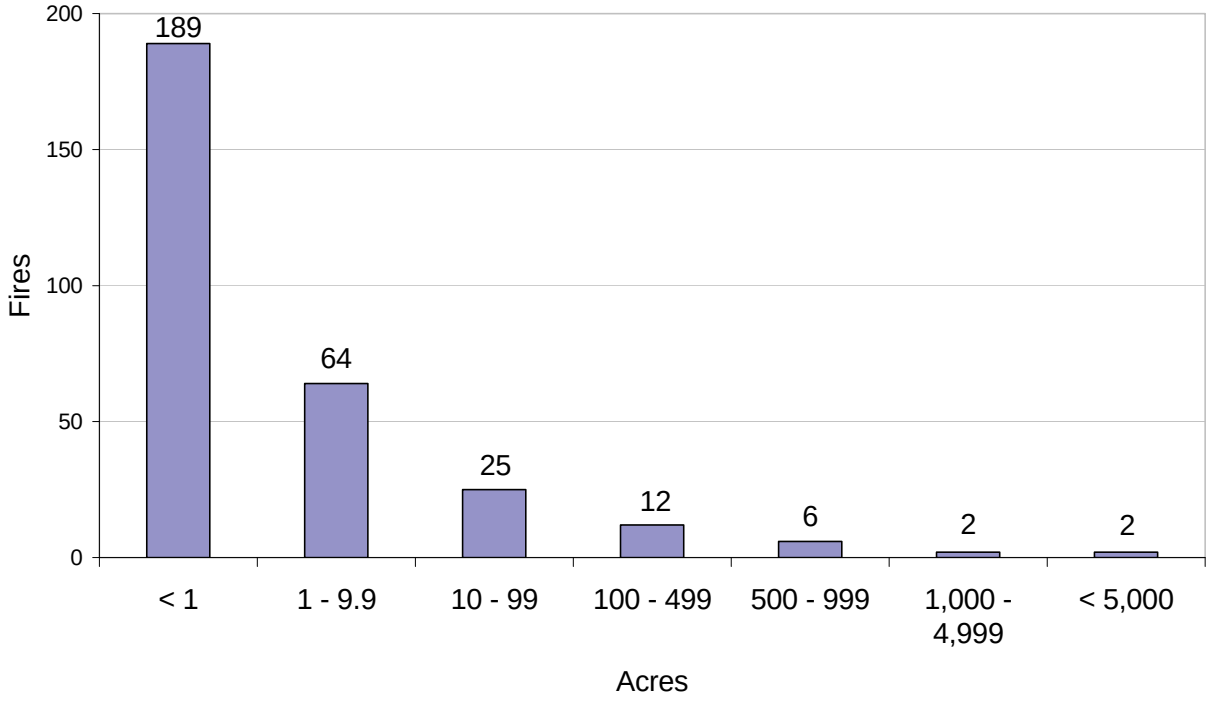
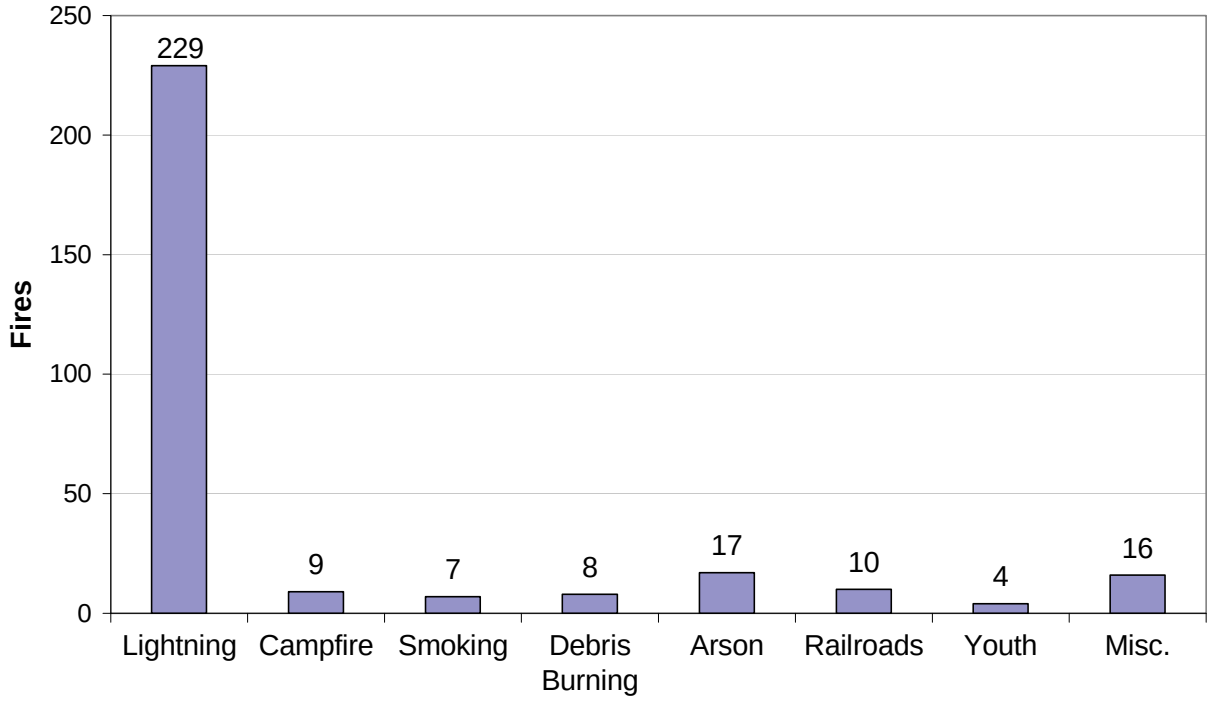


Figure 3-19. Richfield Field Office Wildfire Causes (1979–2003)



3.3.11.2 Hazardous Fuels Reductions

Many areas in the lands managed by the RFO have changed from historic disturbance regimes. Aspen forest types, which reproduce through suckering rootstock, need disturbance or dieback to stimulate regeneration (O'Brien and Waters 1998). In the absence of disturbance, areas once dominated by aspen have been supplanted by conifers or sagebrush (Bartos and Campbell 1998). Areas with small amounts of aspen in a stand may indicate that the area was once dominated by aspen (Bartos and Campbell 1998). "An approximately 60% decline in aspen dominated landscapes has occurred on National Forest System lands across Utah" (Bartos and Campbell 1998, pp. 23). Aspen in the planning area, either adjacent to USFS land or in the Henry Mountains, is intermingled with and adjacent to stands of mixed conifer. Conditions noted throughout Utah are not expected to be different from those in the planning area.

The exclusion of frequent, low-intensity fires in ponderosa pine stands has resulted in a buildup of understory fuels in these stands. This change threatens the pine stands, which are resistant to low-intensity fire but susceptible to larger crown fires. Understory fuels act as ladders, allowing fire to jump to the trees' crown, burning ponderosa pine stands.

Using Forest Inventory and Analysis data collected on public lands administered by the RFO, the Rocky Mountain Research Station found that more than 67 percent of plots had a stand age of less than 150 years. These stands form a closed-canopy "belt" between lower valley shrub lands and higher mountain forests. Reduction of fine fuels and decreases in fire return intervals have encouraged pinyon-juniper encroachment, leading to large acreages of closed canopy pinyon-juniper in formerly treeless areas (USFS 2000). As a result, structural stages are strongly weighted to stands much denser than typical conditions.

Stands are considered as functioning properly when they can withstand and/or recover from disturbance. Many vegetation communities, specifically those described above, are not considered in PFC. For further discussion on fire ecology of the various vegetation types, refer to Appendix 6. Table 3-18 identifies existing vegetation acreages and their estimated departure from historic (200–400 years before the present) acreages. It is estimated that Native American -initiated fires composed approximately 40 percent of historic fires (Williams 2003). Therefore, allowing wildland fires at natural levels would not include the Native American –initialed fires.

The increasing size, intensity, and severity of wildfires pose greater threats to human life and property. More people are recreating on and adjacent to public lands and building homes in wildland areas, increasing their exposure to naturally ignited wildland fires and increasing the risk of human-caused wildfires. Additionally, the threat to other resource values from uncharacteristically intense and severe wildfires has increased, resulting from uncharacteristic changes in vegetation, fuel loadings, and fire behavior. Consequently, fire suppression costs have also increased.

Table 3-18. Vegetation Departure from Historic Acreages

Class Name	Historic Acreages	Percentage of Total	Existing Acreages	Percentage of Total
Other Non-Vegetation	67,858	3.2%	67,858	3.2%
Spruce-Fir[3]	17,022	0.8%	29,317	1.4%
Aspen	20,251[1]	1.0%	5,786	0.3%
Ponderosa Pine	44,463	2.1%	42,785	2.0%
Oak	26,330	1.2%	19,629	0.9%
Mountain Shrub	24,781	1.2%	16,378	0.8%

Class Name	Historic Acreages	Percentage of Total	Existing Acreages	Percentage of Total
Pinyon-Juniper	216,036[2]	10.2%	551,674	25.9%
Sagebrush Steppe	660,468	31.0%	343,781	16.2%
Desert Grassland	324,652	15.3%	324,652	15.3%
Desert Brush	726,085	34.1%	726,085	34.1%
Total	**2,127,946**		**2,127,945**	

Notes—
1—Desired aspen figure created by dividing existing acreage by 0.4, basing this figure on Campbell and Bartos (1998) conclusion that aspen in Utah has undergone a 60% reduction in coverage.
2—Forest Inventory and Analysis data collected and determined from public lands within the planning area indicates that approximately 67.6% of the pinyon-juniper woodland type in the RFO is 150 years old or younger. It is assumed that 90% of that 67.6% is not in PFC and requires treatment within the next 100 years. The trees older than 150 years and 10% of those younger than 150 years, are assumed to be stable stands that are not adapted to the 10–30 year fire interval (e.g., those located on dry, rocky ridges, very xeric soils).
3—The highest elevations of the spruce/fir type have very long fire return intervals, and these ecosystems have not been adversely affected by fire exclusion.

Sources: Fishlake National Forest Prescribed Natural Fire Plan (1998); USFS, 2000; USFS, 2004

3.3.11.3 Fuels Treatments

Over the last 20 years, the construction of homes and businesses in the wildland-urban interface (WUI) has compounded the problem of fuels accumulation. The resulting risk of exposure to high-intensity fires that could threaten safety and property has increased. Declining vegetation conditions and increased construction have required a more active hazardous fuel treatment program to reduce the number and severity of wildfires.

Before implementation of the 1995 Federal Wildland Fire Management Policy, fewer than 1,000 acres of vegetation per year were treated in the RFO. This acreage included prescribed fire and other means of treating fuels. Since 1995, hazardous fuel reduction efforts within the RFO have treated roughly 4,000 acres per year. The focus of most of these treatments has been on reducing hazardous fuels in WUI areas, although treatments were also implemented to improve ecosystem health, improve rangeland production, and enhance wildlife habitat.

3.3.11.4 Fire Regimes and Condition Classes

Fire regimes address the nature of disturbance by fire by describing its historic intensity, frequency, and effect on vegetation. Knowledge of fire regimes is a critical component in managing landscapes and analyzing changes in fire frequencies and intensities. Table 3-19 lists the natural fire regimes by which vegetation is classified in the RFO. Categorization of vegetation types by fire regimes was based on information that is provided in Appendix 6.

Table 3-19. Fire Regime Classifications and RFO Estimated Acreage

Regime	Fire Frequency	Fire Intensity	Estimated Acres in RFO	Percentage of Total
Fire Regime I	0–35 years	Low Severity	43,600	2.1%
Fire Regime II	0–35 years	Stand Replacing	903,000	44.0%
Fire Regime III	35–100 years	Mixed Severity	34,700	1.7%

Regime	Fire Frequency	Fire Intensity	Estimated Acres in RFO	Percentage of Total
Fire Regime IV	35–100 years	Stand Replacing	1,070,600	52.2%
Fire Regime V	More than 200 years	Stand Replacing or Mixed Severity	300	<0.1%

Source: U.S.C. 2003; USFS 2001; USGS 2004.

As they relate to fire, vegetation conditions are evaluated by the degree of departure from fire regimes that a specific vegetation community demonstrates. Departure from fire regimes is indicated by changes to key ecosystem components (e.g., species composition, structural stage, stand age, canopy closure, and fuel loadings). The degree of departure is ranked using 3 condition classes that categorize vegetation communities by evaluating the difference between their historic fire regime and related indicating characteristics, and their current condition and its indicating characteristics. Simply put, fire regime "condition classes are a qualitative measure describing the degree of departure from historical fire regimes" (Schmidt K.M. *et al.* 2002). Table 3-20 shows the estimated acreage of vegetation in the RFO in each condition class.

Table 3-20. Fire Regime Condition Class Description and RFO Estimated Acreage

Condition Class	Description	Estimated Acres in RFO	Percentage of Total
1	Fire regimes are within a historical range, and the risk of losing key ecosystem components is low. Vegetation attributes (species composition and structure) are intact and functioning within a historical range.	2,300	<1%
2	Fire regimes have been moderately altered from their historical ranges. The risk of losing key ecosystem components from fire is moderate. Fire frequencies have departed from historical frequencies by one or more return intervals (either increased or decreased), resulting in moderate changes to the size, intensity, or severity of fires or to landscape patterns. Vegetation attributes have been moderately altered from their historical range of attributes.	281,000	14%
3	Fire regimes have been significantly altered from their historical ranges. The risk of losing key ecosystem components from fire is high. Fire frequencies have departed from historical frequencies by multiple return intervals, resulting in dramatic changes to the size, frequency, intensity, or severity of fires or landscape patterns. Vegetation attributes have been significantly altered from their historical range of attributes.	1,768,900	86%

Sources: Schmidt K.M. *et al.* 2002; U.S.C. 2003; USGS 2004.

Areas in Condition Classes 2 and 3 are of most concern because they often need management intervention before allowing fire to return naturally. Acreage of vegetation in Condition Class 3 is high because much of the RFO has converted to pinyon-juniper and sagebrush vegetation types.

3.3.12 Non-WSA Lands with Wilderness Characteristics

Since WSAs were established in the 1980s, designation of wilderness in Utah has become a prominent state and national issue. For more than 20 years, the public has debated which lands have wilderness characteristics and should be considered by Congress for wilderness designation. As a result of the debate (and a significant passage of time since BLM's original inventories), in 1996 the Secretary of the Interior directed the BLM to take another look at some of the lands in question. In response to this direction, the BLM inventoried these lands and found approximately 2.6 million acres of public land statewide (outside of existing WSAs) to have wilderness characteristics (BLM 1999).

In September 2005, the BLM and the State of Utah, the Utah School and Institutional Trust Land Administration (SITLA), and the Utah Association of Counties (collectively "Utah") reached an agreement negotiated to settle a lawsuit originally brought in 1996 by the State of Utah, which challenged the BLM's authority to conduct new wilderness inventories. The settlement stipulated that the BLM's authority to designate new WSAs expired no later than October 21, 1993. Pursuant to the Federal Land Policy and Management Act of 1976 (FLPMA), 43 U.S.C. § 1712(c), the BLM, however, does have the authority to conduct inventories for characteristics associated with the concept of wilderness and to consider management of these values in its land use planning process. The BLM's *Land Use Planning Handbook* (H-1601-1) states that decisions on whether or not to protect wilderness characteristics are to be considered during planning. This section addresses lands outside existing WSAs that have been identified as having wilderness characteristics.

Non-WSA lands with wilderness characteristics are those that have the appearance of naturalness and outstanding opportunities for solitude or primitive and unconfined recreation, and also comprise an area of 5,000 acres, or areas less than 5,000 acres that are contiguous to designated wilderness, WSAs, or other administratively endorsed for wilderness management lands, or, in accordance with the Wilderness Act's language, areas "of sufficient size as to make practicable its preservation and use in an unimpaired condition." BLM used the same criteria for determining wilderness characteristics as in the 1979 wilderness inventory. The 5,000-acre value was helpful to BLM in making preliminary judgments, but it was not considered a limiting factor. The size criterion of 5,000 acres was applied only to standalone units, that is, units not contiguous with other federal lands previously determined to possess wilderness characteristics (e.g., WSAs and NPS and USFS lands that are administratively endorsed for wilderness). Units contiguous with federal lands with wilderness characteristics were evaluated for all wilderness characteristics found in the inventoried area. Opportunities for solitude and primitive recreation were assumed present in association with the larger contiguous area.

Detailed information about non-WSA lands with wilderness characteristics is part of the administrative record for this Proposed RMP/Final EIS. The following records are available for public review at the RFO: 1) 1999 Utah Wilderness Inventory; 2) 1999 Utah Wilderness Inventory Revision Document for the Richfield Field Office (December 2002); 3) 1999 Utah Wilderness Case Files for the RFO; 4) Reasonable Probability Determinations for the RFO; and 5) Documentation of Wilderness Characteristics Review for the RFO.

Non-WSA lands with wilderness characteristics that were inventoried by BLM in the 1999 Utah Wilderness Inventory included approximately 511,200 acres in 20 wilderness inventory areas (WIA). On the basis of subsequent public comments and after conducting additional field checks, the BLM revised the inventory in December 2002. The revised inventory identified a total of 551,770 acres in 20 WIAs within the RFO possessing wilderness characteristics. The inventory and the inventory revision also identified areas in portions of WIAs that did not have wilderness characteristics.

In addition to the lands that were inventoried in the 1999 Utah Wilderness Inventory and its revision, additional lands in the RFO have been reviewed for wilderness characteristics by BLM. These lands are currently proposed for wilderness as part of S.1179, America's Red Rock Wilderness Act of 2007, and are neither WSAs nor WIAs. (Note: The Act has been introduced in Congressional Term 110 as S.1170). The wilderness characteristics review process involved a BLM interdisciplinary team that reviewed available information and followed up with field trips where necessary. The BLM interdisciplinary team evaluated information provided by the public about these areas, their on-the-ground knowledge of these areas, information in case files and field files, master title plats, aerial photos, GIS data layers, and field inspections, and determined that all or parts of these areas have wilderness characteristics. When the initial review process was completed, the interdisciplinary team reviewed about another 200,000 acres, of which 130,830 acres were found to have wilderness characteristics.

In summary, since the beginning of the 1999 Utah wilderness inventory process, the BLM has evaluated 31 areas totaling 848,500 acres for their wilderness characteristics in the RFO. Of these, the BLM determined that 29 areas totaling 682,600 acres met the criteria for wilderness characteristics of size, naturalness, and outstanding opportunities for solitude or primitive recreation (Table 3-21 and Map 3-9). These lands, non-WSA lands with wilderness characteristics, have been carried through this land use planning process to determine how their wilderness characteristics will be managed. Of the 38 total areas evaluated in table 3-21, 9 of the inventoried areas were found to lack wilderness characteristics, and are also summarized in the table. During the comment period for the DRMP/DEIS, 7 new submittals were received and evaluated for their wilderness characteristics. None of these areas were found to possess wilderness characteristics. The Proposed RMP/Final EIS includes management prescriptions for 12 of the 29 areas totaling 78,600 acres.

Wilderness characteristic areas generally fall into one (or 2) of 3 broad categories:

- Areas contiguous to BLM WSAs
- Areas adjacent to NPS lands administratively endorsed for wilderness designation
- Areas (generally over 5,000 acres) that stand alone as separate units.

Table 3-21. Non-WSA Lands With Wilderness Characteristics Evaluation

#	Area Evaluated	County	Acres Evaluated	Acres Found to Possess Wilderness Characteristics	Comments
1	Bull Mountain	Garfield	4,800	3,800	Contiguous to Bull Mountain WSA.
2	Bullfrog Creek	Garfield	42,600	33,700	
3	Cane Spring Desert	Garfield	18,300	0	
4	Dirty Devil/ French Spring	Garfield Wayne	149,500	133,100	Contiguous to Dirty Devil and French Spring WSAs. Includes Dirty Devil eligible wild and scenic river (WSR) segment.
5	Dogwater Creek	Garfield	3,500	3,500	Contiguous to Capitol Reef National Park lands that are administratively endorsed for wilderness designation.
6	Fiddler Butte	Garfield	22,000	19,700	Contiguous to Fiddler Butte WSA.
7	Flat Tops	Wayne	23,000	23,000	Adjacent to non-WSA lands with wilderness characteristics in the Price FO (Emery County)

#	Area Evaluated	County	Acres Evaluated	Acres Found to Possess Wilderness Characteristics	Comments
8	Fremont Gorge	Wayne	20,100	16,000	Contiguous to Fremont Gorge WSA and Capitol Reef National Park lands that are administratively endorsed for wilderness designation. Includes Fremont Gorge eligible WSR segment
9	Horseshoe Canyon South	Wayne	20,600	20,600	Contiguous to Horseshoe Canyon South WSA, Canyonlands National Park (Horseshoe Canyon Unit) and Glen Canyon National Recreation Area (NRA) lands that are administratively endorsed for wilderness designation
10	Jones Bench	Sevier	3,300	3,300	Contiguous to Capitol Reef National Park lands that are administratively endorsed for wilderness designation
11	Kingston Ridge	Piute	10,200	10,200	
12	Labyrinth Canyon	Wayne	27,100	12,300	Adjoins Horseshoe Canyon North WSA, Canyonlands National Park (Horseshoe Canyon Unit) and Glen Canyon NRA lands that are administratively endorsed for wilderness designation
13	Limestone Cliffs	Sevier	24,900	24,800	Adjacent to non-WSA lands with wilderness characteristics in the Price Field Office (Emery County)
14	Little Rockies	Garfield	23,300	23,200	Within Little Rockies National Natural Landmark, contiguous to Little Rockies WSA and Glen Canyon NRA lands that are administratively endorsed for wilderness designation
15	Long Canyon	Garfield	16,600	16,600	Contiguous to Capitol Reef National Park lands that are administratively endorsed for wilderness designation
16	Mount Ellen—Blue Hills	Garfield Wayne	66,900	49,800	Contiguous to Mount Ellen/Blue Hills WSA
17	Mount Hillers	Garfield	2,300	1,800	Contiguous to Mount Hillers WSA.
18	Mount Pennell	Garfield	77,000	65,600	Contiguous to Mount Pennell WSA
19	Muddy Creek/Crack Canyon	Wayne	65,600	61,800	Adjacent to non-WSA lands with wilderness characteristics in the Price Field Office (Emery County)
20	Mussentuchit Badlands	Sevier	700	700	Adjacent to non-WSA lands with wilderness characteristics in the Price FO (Emery County)
21	Notom Bench	Wayne	8,700	8,000	Contiguous to Capitol Reef National Park lands that are administratively endorsed for wilderness designation
22	Phonolite Hill	Piute	7,900	7,900	

#	Area Evaluated	County	Acres Evaluated	Acres Found to Possess Wilderness Characteristics	Comments
23	Pole Canyon/Hunter Spring	Garfield	6,000	6,000	
24	Ragged Mountain	Garfield	30,100	25,900	
25	Red Desert	Wayne	40,900	40,700	Contiguous to Capitol Reef National Park lands that are administratively endorsed for wilderness designation
26	Robbers Roost Flats	Wayne	7,700	0	
27	Rock Canyon	Sevier	1,300	1,300	Adjacent to non-WSA lands with wilderness characteristics in the Price FO (Emery County)
28	Rocky Ford	Piute	6,700	6,700	
29	Sweetwater Reef	Wayne	6,200	6,200	Adjacent to non-WSA lands with wilderness characteristics in the Price FO (Emery County)
30	Wild Horse Mesa	Wayne	88,300	49,700	Adjacent to non-WSA lands with wilderness characteristics in the Price Field Office (Emery County)
31	Wildcat Knolls	Sevier	22,400	6,700	Adjacent to non-WSA lands with wilderness characteristics in the Price FO (Emery County)
32	Aquarius Plateau	Garfield and Wayne	16,500	0	
33	North Sevier Plateau	Piute and Sevier	35,900	0	
34	Pahvant Range	Sevier	3,800	0	
35	South Sevier Plateau	Piute	17,100	0	
36	Thousand Lakes	Wayne	3,000	0	
37	Tushar Mountains	Piute and Sevier	4,300	0	
38	Wasatch Plateau	Sevier	1,100	0	
	Total		**930,200**	**682,600**	

3.4 RESOURCE USES

3.4.1 Forestry and Woodland Products

3.4.1.1 Forest and Woodland Types and Products

Forested and woodland areas within the RFO range from oak and pinyon-juniper stands to aspen, ponderosa pine, Douglas fir, white fir, Englemann spruce, and limber pine. Generally, lower elevations (6,000 feet to 8,400 feet) are dominated by woodland species, such as juniper. Middle elevations (7,000 feet to 7,500 feet) are a mix of pinyon-juniper, whereas in higher elevations (7,500 feet to 8,000 feet) pinyon and oak brush dominate with the occasional juniper. Pinyon-juniper stands compose the largest forest cover type within the RFO (see Section 3.3.4, Vegetation).

As elevation increases, timber species dominate the cover type. Between 8,000 feet and 9,600 feet, ponderosa pine and aspen are the major species, whereas Douglas fir, white fir, subalpine fir, Engelmann spruce, aspen, and limber pine are found at elevations above 9,600 feet. Generally, timber species are located on north- and northwest-facing slopes or in canyon bottoms where there is enough soil moisture to sustain timber. The largest concentrations of timber cover types are found in the Henry Mountains and along the border between BLM and USFS-administered lands (Map 3-3).

Pinyon-juniper woodlands cover 552,000 acres, about one-quarter of the RFO. In contrast, true forests—including ponderosa pine, mixed-conifer, and aspen—represent only 5 percent of the RFO and are located primarily in the Henry Mountains. Forests and woodlands within the RFO are of limited commercial value because of their low productivity and distance from markets. By and large, the aesthetic and ecological importance of forests far outweighs their limited economic value.

Pinyon-Juniper Woodlands

Pinyon-juniper woodlands are increasing in size and density over a large portion of the RFO. This increase is attributed to the absence of wildland fire for the last century and long-term pinyon-juniper management. Where pinyon-juniper canopy cover is dense with large trees, very few, if any, desirable forage species are present. Plant species diversity is decreasing because of the increasing tree canopy cover.

The boundaries of the pinyon-juniper woodlands are also increasing. Pinyon-juniper woodlands are invading sagebrush areas and are outcompeting desirable forage species. Shrubs and herbaceous plants reduce erosion better than pinyon-juniper trees. Increasing pinyon-juniper density adversely affects watershed health. Areas with steep slopes and erodible soils in pinyon-juniper tree cover are vulnerable to serious soil erosion. Pinyon-juniper woodlands do not burn in normal precipitation years but during years of drought, the buildup of continuous fuels is a fire hazard. Because these woodlands have expanded into areas formerly occupied by other vegetation types, management attention has focused on reducing, rather than the sustaining them.

Pinyon pine provides utilitarian value in the form of firewood, Christmas trees, and pine nuts. Juniper is used for fence posts and firewood. Both are unsuitable for lumber because of their small size, irregular shape, and lack of self-pruning lower limbs. Approximately 600 cords of firewood (both commercial and non-commercial) and 150 Christmas trees are harvested from the RFO per year.

Ponderosa Pine

Ponderosa pine forests cover 43,000 acres, or about 2 percent of the RFO. In the inland west and southwest, ponderosa pine is a commercially valuable and productive timber tree. Currently, this species is less important economically in the planning area, but there have been limited sales of ponderosa pine in the past. Permits for ponderosa pine harvesting are limited to a few trees each and occur primarily for fire salvaged trees. Requests are evaluated on a case-by-case basis.

Mixed-Conifer

Less than 2 percent of the RFO (29,000 acres) is forested by mixed-conifer stands, which include Engelmann spruce, white fir, subalpine fir, Douglas fir, and several pine species. Although commercially important elsewhere, these forests are of limited economic value within the RFO. Requests for harvesting of mixed conifer species are evaluated on a case-by-case basis, and there have been no known recent sales.

Aspen

Quaking aspen forests cover 12,000 acres, less than 1 percent of the RFO. Because it is easy to cut, aspen is sometimes used for firewood. It has no commercial value within the RFO. No recent permits have been issued for aspen. Requests are evaluated on a case-by-case basis.

3.4.1.2 Current Level of Forest and Woodland Activity

In 2001, RFO and Henry Mountain Field Station issued 647 permits for forest products; 268 of these permits were for collecting seeds from wildland sources. In 2002, the 2 offices issued 456 permits for forest products, with 109 of them for collecting seeds from wildland sources. Because of the serious drought and the decrease in seed production in 2002, the RFO did not issue as many seed permits in 2002, and did not issue any seed permits at all in the fall/winter of 2002–2003.

3.4.1.3 Forest and Woodland Health

The RFO has many areas of diseased or insect killed trees in the pinyon-juniper woodlands. This is generally limited to single trees, but some small patches, usually less than an acre, are scattered throughout the area. During the prolonged drought of the late 1990s and early 2000s, areas of pinyon-juniper woodlands died. Forests in the Henry Mountains also suffered from disease and insect infestations. In 2003, a large number of pinyon and juniper trees died on the north end of the Henry Mountains and in other areas. Portions of Mount Ellen, Mount Pennell, and Mount Hillers burned during 2003.

In 2001 and 2002, in accordance with the National Fire Plan, the RFO and the Interagency Fire Management organization began a cooperative effort to reduce fuels and restore forest and woodland health on a much larger scale. In 2002, mechanical methods were used to reduce fuels and restore woodland health on 4,061 acres within the RFO.

3.4.2 Livestock Grazing

Passage of the Taylor Grazing Act in 1934 initiated the federal effort to regulate livestock grazing on public lands to provide for the orderly use, improvement, and development of the range. The act established a system for allotting grazing privileges to livestock operators based on grazing capacities and priorities of use, and to delineate allotment boundaries. It also established standards for rangeland improvements and implemented grazing fees. The act placed 142 million acres of land in western states under the jurisdiction of the Grazing Service, which evolved into the BLM in 1946. FLPMA and the Public Rangelands Improvement Act (PRIA) of 1978 provide additional authority for the management of livestock grazing on public land.

3.4.2.1 Grazing Authorization

Within the RFO, the BLM manages livestock grazing on public lands in Sanpete, Sevier, Wayne, and Piute counties; portions of Garfield County; and some allotments within Glen Canyon NRA and Capitol Reef National Park. Livestock grazing on public land is administered through livestock grazing allotments, shown on Map 2-7. Through an inter-district agreement, the Price FO manages several allotments within the RFO, and the RFO manages several allotments within the Price FO. In 2002, 194 allotments in the RFO were used by 143 livestock operators. The total forage available for livestock use in the RFO is 109,951 animal unit months (AUM). The total AUMs authorized for the past 15 years are shown in Table 3-22. Grazing permits are usually issued for 10 years. Active use varies from the permitted use shown in the table as a result of fluctuations in forage availability and decisions of livestock operators to use or not use the public range in a given year. Appendix 7 (Table A7-1) provides detailed information on existing grazing allotments in the RFO.

Table 3-22. Comparison of Total Permitted Use to Active Use

Year	Active Use			Permitted Use
	Cattle	Sheep	Total	
1988	40,467	9,426	49,893	109,951
1989	35,337	8,282	43,619	109,951
1990	30,202	7,793	37,995	109,951
1991	35,837	6,423	42,260	109,951
1992	39,783	7,478	47,261	109,951
1993	42,768	9,393	52,161	109,951
1994	43,338	8,913	52,251	109,951
1995	47,532	11,514	59,046	109,951
1996	48,996	8,788	57,784	109,951
1997	48,894	10,051	58,945	109,951
1998	59,930	9,664	69,594	109,951
1999	62,295	10,062	72,357	109,951
2000	50,246	9,160	59,406	109,951
2001	63,743	12,848	76,591	109,951
2002	52,287	7,647	59,934	109,951
2003	31,011	8,910	39,921	109,951

Year	Active Use			Permitted Use
	Cattle	Sheep	Total	
Average	45,792	9,147	54,939	109,951

Source: RFO Grazing Files.

3.4.2.2 Allotment Categorization and Management

Allotments in the RFO are divided into 3 selective management categories. These categories were developed in 1981 to prioritize grazing allotments to achieve cost-effective improvement of rangeland condition and production. This selective management process emphasized those allotments with the most need and the best potential for return on the investment of public funds. Most allotments have been placed into one of the 3 categories according to management needs, resource conflicts, potential for improvement, and funding and/or staffing constraints. The 3 management categories are: Improve, Maintain, and Custodial.

Improve category allotments are managed to improve current resource conditions on allotments with resource issues and which have a high potential for return on investment. They receive the highest priority for funding and management actions. Maintain category allotments are managed to maintain current satisfactory resource conditions. They are actively managed to ensure that resource values do not decline. Custodial category allotments are under custodial management by the BLM to protect resource conditions and values. As watersheds are evaluated, the allotment category is reviewed. The RFO has 91 Improve category allotments covering 1,657,475 acres, 25 Maintain category allotments covering 589,884 acres, and 25 Custodial category allotments covering 80,339 acres. There are 10 allotments that have not been categorized because they were unallotted at the time the allotment categorization process was implemented. Information specific to each of the 184 allotments in the RFO is provided in Appendix 7.

3.4.2.3 Rangeland Improvement Projects

The BLM and its cooperators have completed structural and nonstructural projects on public lands to improve and manage rangelands since 1943. The nonstructural projects include seeding, plowing, harrowing, chaining, contour furrowing, and herbicide spraying. The structural projects have included wells, pipelines, troughs, fences, guzzlers, reservoirs, and cattle guards.

Non-native seeding has occurred since the 1950s, with most activity occurring in the 1960s. Seeding has been implemented on a very limited scale from the 1970s to the present. The original objectives of rangeland seeding with non-native species were watershed protection and increases in wildlife and livestock forage. Seeding in the Henry Mountains was undertaken to increase forage to accommodate both bison and livestock. Development of various grazing systems resulted in implementing a variety of vegetation treatments (including seedings), which were used to take grazing pressure off adjacent native vegetative communities. Most seedings completed since the 1970s have been developed because of emergency fire rehabilitation on sites that were susceptible to erosion and the invasion of noxious weeds and non-native annual grass species (such as cheatgrass).

As mandated in FLPMA and PRIA, a portion of the grazing fees is invested in range improvements, with the expectation that these improvements may benefit wildlife, watersheds, and livestock producers. Using emergency fire rehabilitation funds, additional public land resources have been protected through rehabilitation of burned areas, thereby reducing soil loss and decreasing the ability of noxious weeds and annual non-native grasses to become established. Livestock operators, state and federal agencies, and other interested public entities have continued to fund rangeland improvement construction.

3.4.2.4 Fundamentals of Rangeland Health and Standards and Guidelines for Grazing Administration

In May 1997, under the authority of the regulations at 43 CFR 4180 (Fundamentals of Rangeland Health and Standards and Guidelines for Grazing Administration), the Utah State Director approved Utah's *Standards for Rangeland Health and Guidelines for Livestock Grazing*. These standards and guidelines provide a clear statement of agency policy and direction for those who use public lands for livestock grazing and for those who are responsible for their management and accountable for their conditions. The fundamentals of rangeland health combine the basic precepts of physical function and biological health with elements of law relating to water quality and plant and animal populations and communities.

The standards are goals for the desired condition of the biological and physical components and characteristics of the rangelands. These standards are measurable and attainable, comply with various federal and state statutes, policies, and directives applicable to BLM rangelands, and are the minimum resource condition that must be achieved and maintained. An interdisciplinary team conducts watershed assessments with participation from permittees and other interested parties. The assessments determine whether the *Standards for Rangeland Health* are being met. The 4 standards for rangeland health are as follows:

- **Standard 1:** Uplands soils are in PFC.
- **Standard 2:** Riparian and wetland areas are in PFC.
- **Standard 3:** Desired species, including native, threatened, endangered, and SSS, are maintained at an appropriate level.
- **Standard 4:** Water quality meets state standards.

In accordance with the regulations at 43 CFR 4180, if existing grazing management and livestock use is a significant factor in the non-attainment of a standard, appropriate actions must be taken that will result in significant progress toward attainment of the standard(s).

3.4.3 Recreation

The recreational resources of the lands managed by the RFO represent some of the most unusual and least explored recreation opportunities in the region. However, in certain parts of the RFO, increased visitor use is affecting soil, water, vegetation, and wildlife. Conflicts among recreationists are also beginning to increase. In some areas, recreation use conflicts with other resources and uses, such as livestock grazing, wildlife habitat needs, and wilderness characteristics.

All of the RFO is included in a recreation fee project in the Henry Mountains/Sevier River area. Participation in the recreation fee program is authorized by the Federal Lands Recreation Enhancement Act (FLREA) and allows an FO to collect fees for specific types of recreational uses, and then expend the fees to manage the lands where they were collected. Monies collected have been used to maintain and improve campgrounds and picnic areas, install new informational signs, replace waterlines and hydrants to supply drinking water, monitor recreation uses, improve hiking trails, and generally improve the recreational experience within the RFO.

3.4.3.1 Recreation Management Areas

Recreation Management Areas (RMA) are BLM's primary means of managing recreational use of the public lands. Public land falls within either a Special RMA (SRMA) or Extensive RMA (ERMA). SRMAs are areas that require a recreation investment, where more intensive recreation management is needed, and where recreation is a principal management objective. These areas often have high levels of recreation activity and valuable natural resources. Under existing LUPs, only a small area at the head of Yuba Lake is established as an SRMA. The Yuba Lake SRMA is and will continue to be managed by the Fillmore FO. All other lands are managed as an ERMA. The ERMA consists of areas in which recreation is nonspecialized and dispersed and does not require intensive management (although such areas may contain recreation sites). Although the primary management objective of the ERMA is not necessarily recreation, the large number of attractive recreation sites and areas make recreation management an important consideration.

3.4.3.2 Special Recreation Permitting

As authorized by 43 CFR 2932, 4 types of uses exist for which special recreation permits (SRP) are required: commercial use, competitive events, organized groups, and recreation use in special areas.

The BLM issues SRPs for noncommercial use in certain special areas, including long-term visitor areas, river use areas, and backcountry hiking or camping areas. The RFO issues noncommercial recreation use permits (RUP) for individual use of 3 fee-site campgrounds. The RFO issued 254 RUPs during the 2004 fiscal year (FY).

Commercial SRPs are issued for commercial and competitive uses of public lands and organized events. SRPs may be issued for 10 years or less, with annual renewal, after which time outfitters must reapply for permits. The permits are issued as a means of managing visitor use, protecting natural and cultural resources, and for providing a mechanism for accommodating commercial recreational uses. The RFO issued 32 SRPs during the 2004 fiscal year. The total number of participants in recreational activities authorized by SRPs during 2004 was 12,008, generating $109,077 in revenue.

3.4.3.3 Recreation Visitation

BLM recreation visitation is recorded in the Recreation Management Information System (RMIS). RMIS estimates recreation participation for 65 types of recreation activities recorded at BLM sites and areas

based on registrations, permit records, observations, and professional judgment. Visitation is estimated by numbers of participants as well as counted by actual visitor days. Participants are the actual number of people who take part in a recreational activity. A visitor day is a common recreation unit of measure used among federal agencies. One visitor day represents an aggregate of 12 visitor hours at a site or area.

In the past decade several activities made substantial contributions to total visitation (e.g., total visitor days) within the RFO. Camping, driving for pleasure, and backpacking were the most common forms of recreation. Aggregate OHV use (attributed to all-terrain vehicles [ATV] as well as cars, trucks, and sport utility vehicles [SUV]) is another common form of recreation. Picnicking, hiking, and viewing wildlife, as well as fishing and big game hunting, were also common recreation activities.

Table 3-23 lists the RMIS figures for the RFO for the FY 2001 through 2004.

Table 3-23. Recreation Visitation

Activity	Oct. 2000–Sept. 2001		Oct. 2001–Sept. 2002		Oct. 2002–Sept. 2003		Oct. 2003–Sept. 2004	
	Participants	Visitor Days[1]	Participants	Visitor Days[1]	Participants	Visitor Days[1]	Participants	Visitor Days[1]
Backpacking	72,368	74,079	54,754	56,338	49,766	50,826	50,786	51,610
Camping	128,418	125,787	98,951	96,285	103,968	100,783	105,128	102,144
Climbing (Mountain/Rock)	2,122	583	1,514	414	1,413	353	1,480	370
Driving for Pleasure	156,429	73,151	129,200	55,149	132,402	53,477	132,195	55,034
Environmental Education	2,320	800	1,769	639	1,722	620	1,882	670
Fishing (Freshwater)	26,815	5,890	28,075	6,215	56,103	13,246	53,296	12,581
Gather Non-Commercial Products	4,885	1,221	4,825	1,206	4,680	1,170	4,455	1,114
Hiking/Walking/Running	80,699	42,967	62,744	31,152	65,323	30,247	66,189	31,507
Horseback Riding	4,905	1,026	4,825	1,005	4,680	975	4,455	928
Hunting—Big Game	22,364	15,878	18,684	12,240	17,955	11,720	17,871	11,945
Hunting—Small Game	9,770	2,035	9,650	2,010	9,419	1,950	8,910	1,856
Hunting—Waterfowl	990	165	1,055	176	2,675	446	2,540	423
OHV (ATV)	75,751	29,652	60,945	22,254	63,062	21,750	63,834	22,492
OHV (Cars/Trucks/SUVs)	76,600	43,785	58,804	31,954	56,483	30,625	57,787	31,836
Pack Trips	2,076	2,078	1,478	1,476	1,413	1,413	1,480	1,480
Picnicking	112,439	9,811	81,422	7,213	78,082	6,916	81,055	7,148
Powerboating	8,110	1,352	8,290	1,382	13,471	2,245	12,800	2,133
Rockhound/Mineral Coll.	4,128	1,032	2,951	738	2,826	706	2,960	740
Row/Float/Raft	2,064	2,069	1,476	1,476	1,413	1,413	1,480	1,480
Snow Play (General)	977	81	965	80	936	78	891	74
Swimming/Water Play	9,125	760	9,360	780	16,181	1,348	15,375	1,281
Target Practice	9,770	814	9,650	804	9,360	780	8,910	743
Viewing (Wildlife)	46,832	7,356	41,131	5,897	50,721	6,586	49,481	6,594
Viewing (All Other)	16,228	1,373	14,732	1,203	14,528	1,177	14,206	1,026
Other	117	141	104	106	155	154	95	86
Total	**876,302**	**443,886**	**707,354**	**338,192**	**758,737**	**341,004**	**759,541**	**347,295**

Note:
1—A recreation visitor day is equivalent to 12 hours of participation in a given recreational activity.
Source: Bureau of Land Management, Recreation Management Information System.

3.4.3.4 Developed Recreation Sites

The RFO manages a small number of developed recreation sites as shown in Table 3-24.

Table 3-24. Developed Recreation Sites—Richfield Field Office

Site Name	Description
Otter Creek Reservoir Fisherman's Beach Tamarisk Point South Point	Minimal day-use facilities, dispersed camping areas, and fishing access to the reservoir. Primary activities are fishing and boating.
Wolverton Mill	Day-use and interpretive facilities at a relocated cultural site adjacent to the BLM office in Hanksville.
Hog Springs Picnic Area	Day-use facility. The site serves primarily as a roadside rest stop, picnic site, and trailhead.
Lonesome Beaver Campground	Fee site with day-use and camping facilities, along with culinary water. Primary use is camping.
McMillan Spring Campground	Fee site with day-use and camping facilities with culinary water. Primary uses are camping, OHV driving, and viewing bison.
Starr Springs Campground/ Picnic Area	Fee site that features day-use and camping facilities with culinary water. Panorama Knoll Nature Trail and the Starr Ranch are at the site. Site is primarily used for camping.
Dandelion Flat Picnic Area	Day-use and primitive camping facilities with culinary water. Serves picnicking and primitive camping uses. Also serves as a trailhead for Mount Ellen.
Koosharem Reservoir	Minimal day-use facilities. Primarily serves as a roadside rest stop.

3.4.3.5 Recreation Use Conflicts

Recreational activities can conflict with one another and affect the available opportunities and experiences. For example, heavy use of an area by motorized users can displace non-motorized users. Various recreation activities also affect other resources, such as riparian areas, cultural resources, vegetation, wildlife, soils, grazing, and mineral extraction. Specific areas where recreation and/or resource conflict occurs include the Dirty Devil region, Factory Butte, and the Henry Mountains.

3.4.4 Travel Management

Development of the existing transportation system in the RFO has been associated with providing access for resource uses such as mineral development, livestock grazing, and recreation. Increased demand for access to public lands, combined with the research on the impacts of roads to resources and resource uses, has increased the need for a well designed and managed transportation system.

The transportation system includes state, county and BLM system roads, some of which receive regular maintenance. For portions of the transportation system roads that cross BLM-administered land, various government entities and individuals acquire ROWs from BLM. Issuance of ROWs is based on access needs and resource considerations. State and county system roads (depending on class of the road) are usually constructed and maintained to higher standards than BLM roads and provide the primary arterial and collector road systems for access to and through BLM lands. These state and county system roads are not maintained by BLM.

Some locations within the RFO are known and occasionally used for aircraft landing and departure activities that, through such casual use, have evolved into backcountry airstrips. Backcountry airstrips in the RFO receive occasional use by backcountry pilots to camp, explore, or for safety purposes.

In addition to arterial and collector routes, numerous smaller routes lace throughout the RFO that connect more remote locations to the larger roads. These routes are used for recreational purposes, access to range improvements, mineral developments, and non-BLM managed inholdings. Most of these routes are not paved, and most are unimproved in nature; they are of native surface (dirt, gravel, or sand). The BLM used a variety of methods to inventory existing routes/ways within the RFO for consideration in the planning process, including Global Positioning System data (when available), data provided by the counties, map and orthophoto data, and staff/cooperator knowledge. Based on this inventory, the BLM identified 4,380 miles of routes/ways (Map 3-10) within the RFO. It should be noted that route designations are implementation decisions and that the resulting transportation network could change over time. Detailed route inventory maps by alternative will be available for review at the RFO and on the project website for the Richfield PRMP//FEIS at http://www.blm.gov/ut/st/en/fo/richfield/planning.html. Appendix 9 provides additional details on the travel management/route designation process, the implementation process, and the process that would be required to add or remove route designations following completion of the RMP.

3.4.4.1 Off-Highway Vehicles

Management direction for off-highway vehicles is provided in 43 CFR 8340, BLM Manual 8340, and the BLM National OHV Management Strategy. Resource management plans designate areas as open, closed, or limited, with regards to OHV use. Under the existing LUPs, 77 percent (1,636,400 acres) of the RFO is open to cross-country OHV use, 13 percent (277,600 acres) is limited to existing/designated/maintained routes, and 10% (214,000 acres) is closed to OHV use (Map 2-12).

The number of OHVs registered in Utah grew nearly 70 percent between 2001 and 2004. Registrations of OHVs within counties in the planning area have grown as well. County and statewide OHV registrations are shown in Table 3-25.

Table 3-25. OHV Registrations

County	2001	2002	2003	2004
Garfield County	353	585	569	745

County	2001	2002	2003	2004
Piute County	195	256	281	367
Sanpete County	2,594	3,060	2,969	3,885
Sevier County	3,523	3,819	3,708	4,554
Wayne County	277	344	341	462
State Total	**95,569**	**127,556**	**124,954**	**161,350**

Note: Registrations are for State of Utah fiscal year (July 1–June 30).
Source: Eric Stucki, Utah Division of State Parks, Personal communication 2004.

The 11 WSAs within the RFO are designated as either closed or limited for OHV use. There are 188,600 acres closed to OHV use and 258,300 acres where OHV use is limited to identified routes. Within the use areas, there are 42 miles of inventoried ways within WSAs that are currently open to motorized travel.

The Factory Butte area in the eastern portion of the RFO was identified as open to OHV use under 43 CFR 8342.1 in the 1982 Henry Mountain Management Framework Plan (MFP). One section of land (640 acres), commonly referred to as Swing Arm City, was identified as an OHV activity area. This section of land is where the most intensive use was occurring. OHV use in the Factory Butte area has continued to increase and expand beyond the OHV activity area to the point that OHVs are causing or will cause considerable adverse effects on T&E plant species in the area. In September 2006, a restriction order notice was published in the *Federal Register* for the Factory Butte area. The restriction order limited OHV use to designated routes on 142,023 acres of the Factory Butte area. The order did not affect OHV use within Swing Arm City; 2,602 acres remained open as an OHV activity area, and the 2,200 acres of North Caineville Mesa remained closed to OHV use. This restriction order will remain in effect until the RFO Record of Decision (ROD) becomes final. BLM proposes to designate the Factory Butte area as a SRMA to allow for recreational opportunities while protecting the T&E species.

The Paiute and Great Western Trail systems run through the western and central portions of the planning area. They are managed under a memorandum of understanding (MOU) between the BLM, USFS, the State of Utah, and several local governments. The Paiute Trail System is a 900-mile system that crosses several BLM FO jurisdictions, as well as USFS, state, Native American reservation, and private lands. The RFO manages 136 miles of the Paiute Trail System. A portion of the Great Western Trail System also crosses the planning area, the majority of which is on USFS lands. The Great Western Trail totals 138 miles within the planning area, with only 4 miles on BLM-administered land.

Use of these trail systems has been monitored over the past 9 years using trail counters to provide readings of use trends over time. During the 2003 season, the BLM used 25 infrared trail counters strategically located across the 2 trail systems. Use data are also based on observations and comparisons offered by Paiute Trail rangers, district trail managers, trail hosts, and representatives from the BLM, state parks, Paiute ATV Trail Committee, and the Southern Utah OHV Club. Most use (90 percent) was via ATVs, with motorcycles and jeeps accounting for the remaining 10 percent. The OHV monitoring report does not include snowmobile use.

The Paiute system sustained a 16% use increase between 2002 and 2003, while the Great Western Trail experienced a 4% increase during the same period. Results are reported in Table 3-26.

Table 3-26. Paiute ATV and Great Western Trail Systems Estimated Use

Trail	1995	1996	1997	1998	1999	2000	2001	2002	2003
Paiute ATV Trail	18,000	17,268	24,866	29,663	38,618	43,367	45,310	43,152	50,245
Great Western Trail	5,600	5,450	11,755	11,571	13,514	12,137	14,851	13,579	14,167
Total Annual OHV Use	**23,600**	**22,718**	**36,621**	**41,234**	**52,132**	**55,504**	**60,161**	**56,731**	**64,412**

Source: USFS 2003.

Growth of OHV use has become a significant issue within the planning area because of concerns related to the potential resource degradation that can result from unmanaged use.

3.4.4.2 Transportation and Access (SITLA Lands)

Throughout much of Utah, the State owns and manages four isolated sections in each 36-section township. These are generally sections 2, 16, 32, and 36, and are ordinarily one mile square (640 acres). They are primarily administered by the SITLA for the purpose of economic support of the state's public schools and institutional trust funds. Activities on state land generally are not substantially different from those on the surrounding land administered by BLM. Many of the SITLA lands generate funds through grazing permits, ROW easements and permits, and hydrocarbon or other mineral leases.

Many BLM lands with management restrictions, such as WSAs, have state lands that are adjacent to or within their boundaries. State lands that are completely or almost entirely surrounded by BLM lands with management restrictions, or that are managed with administratively endorsed NPS lands, are termed state inholdings.

Existing access to inheld state lands varies. Some of the parcels have direct access through cherry-stemmed or boundary roads of WSAs. Inheld parcels may or may not currently have access, depending upon whether or not existing vehicle routes lead to them. BLM policy, as required by the Cotter decision, is that "the state must be allowed access to the state school trust lands so that those lands can be developed in a manner that will provide funds for the common school..." This decision confined the issue of access to situations directly involving economic revenues generated for the school trust. For example, if a holder of a state oil and gas lease on a parcel of state land that is completely surrounded by a WSA requires access to develop that lease, BLM must grant the leaseholder reasonable access with consideration given to minimize impacts to wilderness character.

3.4.5 Lands and Realty

Public land policy in the United States fundamentally changed with passage of FLPMA in 1976, which directed that "public lands be retained in Federal ownership, unless as a result of the land use planning procedure provided for in this Act, it is determined that disposal of a particular parcel will serve the national interest…." The lands and realty program is a support program to all other resources and resource uses. The goals of the lands and realty program are to manage the public lands to support the goals and objectives of other resource programs, provide for uses of public lands in accordance with applicable laws and regulations while protecting sensitive resources, and improve management of the public lands through land tenure adjustments. The program responds to requests for ROWs, permits, leases, withdrawals, and land tenure adjustments from other programs or outside entities. The frequency of such requests is anticipated to increase as neighboring communities grow and the demand for use of public lands increases. As a result, future management of the lands and realty program will likely become more intense, complex, and costly.

The primary responsibilities of the lands and realty program include land tenure adjustments, withdrawal review, ROWs, and other land use authorizations. The following sections describe the current conditions and status of the lands and realty program within the RFO.

The planning area comprises approximately 5.4 million acres in Sanpete, Sevier, Piute, and Wayne counties, and portions of Garfield County (Map 1-1). (There are also 21,500 acres of Kane County within the planning area; however, these acres lie entirely within Glen Canyon NRA so no decisions within this RMP will affect those lands.) Within this area, BLM manages 2.1 million acres of public land surface and mineral estate, and an additional 95,000 acres of split estate lands (federal minerals where the surface estate is in state or private ownership). Acreage of split estate lands by county is as follows:

- Garfield County: 7,600 acres
- Piute County: 2,800 acres
- Sanpete County: 40,400 acres
- Sevier County: 36,300 acres
- Wayne County: 7,900 acres.

The BLM also has administrative responsibility for 2,082,865 acres of mineral estate where the surface is managed by other federal agencies (USFS and NPS). Chapter 1 summarizes the surface land ownership within the planning area.

3.4.5.1 Land Tenure Adjustment

Land tenure adjustments are often associated with accommodating public and private needs, fulfilling State of Utah entitlements, allowing community expansion, consolidating public land, acquiring and protecting important resources, acquiring access to public lands, or serving a national priority. All land tenure adjustments must be in conformance with applicable LUPs and be subject to valid and existing rights. BLM uses several authorities to make land tenure adjustments through disposal and acquisition, including FLPMA and the R&PP Act.

Disposals

Lands can be disposed of through sale, exchange, state quantity grant, color of title, state In Lieu selection, desert land entry, Carey Act entry, patent under the R&PP Act or through federal legislation. Public lands have potential for disposal when they are isolated and/or difficult to manage. Disposal actions are usually in response to public request, such as community expansion. Disposals result in a title transfer, wherein the lands leave the public domain. All disposal actions are coordinated with adjoining

landowners, local governments, and current land users. Disposal actions require a site-specific environmental analysis in accordance with NEPA (unless the disposal is a result of federal legislation and is exempted from NEPA review). This NEPA analysis may reveal resource conditions that could not be mitigated to the satisfaction of the authorized officer and may therefore preclude disposal.

Public sales of BLM lands are managed under the disposal criteria set forth in Section 203 of FLPMA and the Federal Land Transaction Facilitation Act. Public lands determined suitable for sale are offered on the initiative of BLM unless their disposal was directed by federal legislation. The lands are sold at not less than fair market value. Specific lands suitable for sale must be identified in the applicable LUP. Any lands to be disposed of through sale that were not identified in the LUP would require a plan amendment before a sale could occur. Public lands classified, withdrawn, reserved, or otherwise designated as not available or subject to sale are unavailable.

Lands can also be disposed of as directed by federal legislation. Two past examples of this within the planning area are:

- Public Law 98-219 (dated February 17, 1984) provided for the transfer of title to 1,273.54 acres of public land within the RFO to the Paiute Indian Tribe of Utah.
- Public Law 102-292 (dated May 26, 1992) transferred title and jurisdiction of 10,172.89 acres of public land within the RFO to the Secretary of Agriculture. These lands were added to and are administered as part of the Fishlake National Forest.

Disposal actions were considered in previous LUPs Of the 5 existing LUPs that cover lands currently administered by the RFO, only the Mountain Valley MFP originally identified lands for sale. These LUPs have subsequently been amended to allow additional land sales. To date, a total of 3,557.63 acres have been sold in the RFO under authority of Section 203 of FLPMA. In addition, since the existing LUPs were prepared, 335.48 acres of public land have been disposed of through exchange; 1,171.94 acres have been disposed of by R&PP sales; 83.02 acres have been disposed of by placer mineral patent; and 640 acres have been disposed of by state grants. Future disposal actions are anticipated, as lands are identified for consideration for disposal to consolidate public land, facilitate community expansion, and remove from federal jurisdiction land parcels that are isolated or difficult to manage.

Acquisitions

Acquisition of lands can be pursued to facilitate various resource management objectives. Acquisitions, including easements, can be completed through exchange, purchase, or donations. Land exchanges are initiated in direct response to public demand, or by BLM to acquire sensitive resources and/or improve management of the public lands. Exchange proposals are evaluated on a case-by-case basis to determine if the proposed exchange would be in the public interest and would achieve RMP goals and objectives. A total of 36.37 acres of private land within the RFO have been acquired by BLM since the existing LUPs were prepared. Future land acquisitions are anticipated, as opportunities arise to acquire access to public lands and protect important resources.

3.4.5.2 Withdrawals

A withdrawal is a formal land designation that has the effect of reserving land for a certain use. Withdrawals remove certain public lands from the operation of one or more of the public land laws, excluding lands from settlement, sale, location, or entry, including under the general mining laws and mineral leasing laws. Withdrawals are used to protect major federal investments in facilities or other improvements, reserve lands for specific purposes and use, support national security, protect resources, and provide for public health and safety.

Section 204(l) of FLPMA requires the review of existing withdrawals to determine whether they are still serving the purposes for which they were made. If the withdrawals are no longer serving their intended purpose, they are to be revoked and the lands opened or partially opened to the uses that were previously prohibited. If withdrawals are determined to still meet the purposes for which they were made, they are recommended for extension for a specific term. While BLM can make recommendations to designate, revoke, or extend withdrawals, only the Secretary of the Interior has the authority to actually take these actions.

Approximately 154,700 acres of public land in the RFO are currently withdrawn for various purposes, as shown in Table 3-27. More detailed information on these existing withdrawals can be found in Appendix 5 (Table A5-7). There are currently no withdrawal applications pending. The lands listed in Table 3-27 are subject to withdrawal review.

Table 3-27. Existing Withdrawals on Public Lands within the RFO

Withdrawal Type	Segregative Effect	Affected Acres
Public Water Reserve	Lands included within public water reserves are withdrawn from settlement, location, selection, sale, or entry. They are withdrawn from location of non-metalliferous minerals.	12,230.77
Henry Mountain Administrative Site	Lands are withdrawn from settlement, sale, location, or entry under the general land laws, including the mining laws, but not to leasing under the mineral leasing laws.	41.21
Federal Energy Regulatory Commission (FERC)	When an application is filed with FERC, the lands are withdrawn from operation of the public land laws. However, the lands remain open to location, lease, or disposal of the mineral estate. The issuance of a FERC permit or license withdraws the lands from operation of the mining laws.	1,207.08
Power Site	Lands are withdrawn from all forms of entry, selection, disposal, settlement, or location.	72.80
Oil Shale	Lands are withdrawn from lease, except oil and gas and sodium leasing, or other disposal, and from appropriation under the general mining laws.	141,144.65
Total		**154,696.51**

Source: BLM 2004c.

3.4.5.3 Rights-of-Way

Approximately 475 ROWs exist within the RFO, authorizing construction, operation, and maintenance of powerlines, electric substations, telephone lines and cables, irrigation and culinary water pipelines, springs and wells used for irrigation and culinary purposes, reservoirs, communication sites, ditches and canals, roads, highways, material sites, and other similar uses. The BLM has granted these ROWs to the State of Utah, various counties, individuals, corporations, rural electric associations, partnerships, and other entities. Whenever feasible, BLM encourages joint use and placement of new facilities in previously disturbed areas such as existing communications sites, roads, and highways. There are no officially designated ROW corridors in the planning area; however, several physical corridors containing facilities are not formally designated by an LUP. The BLM is currently addressing designation of energy corridors in an interagency Programmatic EIS (PEIS) for the Western United States (see Section 1.6.4 in Chapter 1).

Prior to 1982, ROWs for federal aid highway projects were issued using the same procedures as for other ROWs. After 1982, these ROWs were processed in accordance with an interagency agreement. The Federal Highway Administration (FHWA) can request the appropriation of public lands from BLM for highway or mineral material site ROWs for highway purposes only. The BLM then issues a Letter of Consent to FHWA, and FHWA, in turn, issues a Highway Easement Deed to the respective state agency. FHWA administers the deed. Since 1982, the BLM has issued more than 90 authorizations for federal aid highway projects statewide. Several of these projects were connected with the construction and/or associated maintenance of Interstate 70 (I-70), Highway 50, Highway 24, and other major highways in the RFO.

Several major power transmission lines in the western part of the RFO connect to the substation located near Sigurd and to numerous power distribution lines scattered across the RFO. Currently, 16 ROWs authorize culinary water sources within the RFO. Details on these ROWs can be found in Appendix 5.

Communication sites host communication equipment and facilities for various uses, such as television, radio, microwave, seismographic, and cellular services. There are currently 37 communication sites throughout the RFO; the BLM has issued 38 ROW grants for various communication uses at these sites. Detailed information is included in Appendix 5 (Table A5-10).

3.4.5.4 Leases and Permits

Land use permits authorize short-term uses of public land involving little or no land improvement, construction, or investment. They can also authorize uses that cannot be authorized under other authorities. A temporary use permit authorizes short-term use of public land for activities connected with construction, operation, maintenance, or termination of a ROW.

Leases are usually issued for longer periods of time than permits. The BLM can issue the following types of leases:

- Leases issued under the authority of Section 302(b) of FLPMA
- R&PP leases
- Airport leases.

Section 302(b) leases authorize uses such as residential, agricultural, industrial, and commercial, as well as uses that cannot be authorized under other authorities and that involve substantial construction, development, or land improvement and investment. R&PP leases authorize uses such as parks, shooting ranges, cemeteries, sanitary landfills, and other recreation and public purposes. Airport leases, as the name implies, authorize public airports.

R&PP leases have been issued for landfill sites, shooting ranges, parks, and other recreation and public purposes. Since 1982, the BLM has issued approximately 35 R&PP leases for public lands within the RFO, of which 9 are currently active. The decrease in R&PP leases can be partially attributed to a conversion of some leases to patents and also to a change in BLM policy that occurred in 1988. The policy was (and is) that no new sanitary landfill sites would be authorized on public land, that all existing R&PP leases for such sites would be terminated as quickly as possible, and that existing landfill sites would either be sold or closed and rehabilitated. This policy was adopted to minimize the potential liability associated with such sites. The R&PP Act was amended in 1988 to allow the disposal (sale) of public lands to be used for solid waste disposal or for any other purpose that includes the disposal, placement, or release of any hazardous substance. Sites other than landfills that qualify include shooting ranges, municipal water treatment plants, and municipal equipment storage facilities. Presently, all R&PP leases for sanitary landfill sites have been terminated. Of the 9 active R&PP leases in the RFO, 4

authorize shooting ranges. Information about these ranges is included in Appendix 5 (Table A5-11). The other 5 existing leases authorize parks and a riding arena.

3.4.5.5 Renewable Energy

Renewable energy generally is defined as energy derived from sources such as wind, solar, and biomass. Wind energy refers to the kinetic energy generated from wind produced by power-generating turbines. Solar energy includes electricity generated from photovoltaic panels. Bioenergy from biomass refers to energy from organic waste products that are either burned directly or converted to fuels that can be burned to produce energy.

A recent study, *Assessing the Potential for Renewable Energy on Public Lands* (USDI and U.S. Department of Energy [USDOE] 2003), presented a nationwide overview of renewable resources on BLM lands in the western United States. The study employed several screening criteria to consider factors that would affect the economic and technical feasibility of renewable power production. This would help to determine the true potential of an area to produce renewable energy. Screening criteria used in the assessment included access to roads and transmission facilities, available land surface, site condition, land use restrictions, distance to population centers, government policies, and regional market conditions. The primary goal of the assessment was to identify BLM planning units in the western United States with the highest potential for development of renewable energy.

The assessment indicates that portions of the RFO have a high potential for solar, wind, and biomass energy. However, the potential for development of these resources is moderate to low due to their distance from roads, transportation facilities, and population centers. There are no renewable energy facilities currently present within the RFO.

In June 2005, the BLM published the *Wind Energy Development, Final PEIS* (BLM 2005c). This PEIS evaluates the potential environmental and socioeconomic impacts associated with wind energy development on BLM-administered lands in 11 western states over the next 20 years (i.e., 2005–2025). To determine where potential development might occur on the basis of land status and wind energy resources, the National Renewable Energy Laboratory (NREL) constructed a maximum potential development scenario to project the amount of wind power that might be generated over the next 20 years in the 11-state study area. The projection included an assessment of the potential wind power supply and demand. Maps depicting BLM-administered lands with low, medium, and high potential for wind energy development were constructed for each of the BLM FOs in the 11-state study area. These maps serve as only a preliminary screening tool for site selection. Developers must still investigate the properties of the wind regime at any candidate site in much greater detail before assigning a practical value to the site and deciding on a course of development.

High and medium wind resource levels are identified within the easternmost portion of Sevier County, Utah, which is located near 345–500 kilovolt (kV) transmission lines. High and medium wind resource levels are also identified between Loa and Bicknell, east of Hanksville, Wayne County, Utah; and several isolated locations disbursed throughout Garfield County, Utah. Because of the remote nature and lack of existing infrastructure at the Wayne and Garfield County locations, the wind energy may not be economically developable and may create potential economic and resource impacts.

Solar resources are considered minimum to low throughout the RFO (5 to 6 kilowatt hours per square meter per day). The 6 kilowatt hours concentration is primarily located within the northwestern portion of Wayne County, while the 5 kilowatt hours concentration is primarily concentrated within Sanpete, Sevier, and Piute counties.

The programmatic policies and BMPs in the proposed Wind Energy Development Program are appropriate for wind energy development activities in the RFO (see Appendix 15).

3.4.6 Minerals and Energy

BLM minerals management policy falls into 3 categories: leasable minerals, locatable minerals, and salable minerals, which are respectively subject to the Mineral Leasing Act of 1920, the general mining laws, and the Materials Act of 1947, and their respective amendments and implementing regulations. Leasable fluid minerals include oil and gas, coalbed natural gas (CBNG), geothermal resources, and tar sands. Leasable solid minerals include coal and sodium. Locatable minerals include metals such as uranium, molybdenum, gold, copper, and manganese, and can include non-metals such as gypsum and limestone. Salable minerals (mineral materials) include sand and gravel, clay, stone, and humate.

The following sections contain summary information concerning mineral resources within the planning area. More specific information is contained in the *Mineral Potential Report* (BLM 2005b) and the coal resource evaluation reports (Appendix 8). The *Reasonably Foreseeable Development Scenario for Oil and Gas and Geothermal Resources (RFD)* contains information about anticipated activities related to those fluid minerals (Appendix 12).

3.4.6.1 Leasable Minerals

Exploration and development of leasable minerals occurs in several stages of activity. For the BLM, the process of leasing has 3 stages. The first stage (land categorization through land use planning) involves determining which public domain lands are available for leasing and under what conditions. The second stage is leasing. The third stage includes exploration, development, and production operations. Leasing for fluid minerals and solid minerals follows different regulatory requirements specific to 43 CFR 3100 for oil and gas, 43 CFR 3200 for geothermal resources, 43 CFR 3400 for coal resources, and 43 CFR 3500 for non-energy solid minerals. For oil and gas, geophysical operations do not require a lease. Leases include the right to explore (usually drilling) and to develop any producible oil and gas. All oil and gas leases are offered competitively, and if not bid on, noncompetitively for 2 years. Leasing of geothermal resources is similar to oil and gas. Coal resources require a license for exploration, and a lease for development (production). All coal leasing is by competitive bidding. Non-energy solid minerals require a prospecting permit or license for exploration, and leases are offered competitively, by preferential right, or noncompetitively.

For oil and gas leasing, the BLM has developed leasing categories to apply to all public lands to indicate availability for such leasing. The first 3 categories are open subject to the terms of the lease. The fourth category precludes oil and gas leasing altogether. These categories are described below.

- **Open Subject to Standard Lease Terms**—Areas identified as open to exploration and development subject to standard lease terms and conditions.
- **Open Subject to Timing Limitations and/or Controlled Surface Use (CSU) (minor constraints)**—Areas identified with these stipulations are open to exploration and development with relatively minor constraints. A timing limitation would preclude activities during specified time frames to protect resource values such as wildlife species. A CSU stipulation would require proposals for oil and gas activities to be authorized according to the controls or constraints specified, such as a distance or buffer from a particular area.
- **No Surface Occupancy (NSO) (major constraint)**—Areas identified as NSO are open to exploration and development, but with the major constraint of precluding oil and gas activities that use the surface of the land.
- **Closed**—Areas identified as closed are not available for oil and gas leasing.

Leasing for coal involves identifying lands that may have a minable coal resource, applying unsuitability criteria, and considering the impacts of coal exploration and development on other resources and vice

versa. For non-energy solid leasable minerals, lands that are open or closed to leasing must be identified along with any area-wide terms, conditions, or other special considerations needed to protect other resource values during exploration or development.

Oil and Gas

The USGS has identified 8 oil and gas plays within the planning area. These are discussed in detail in the *Mineral Potential Report* (BLM 2005b). In simplest terms, oil and gas are most often found in the pore spaces of sedimentary rocks, such as sandstone and limestone, having migrated there from source rocks, such as marine shales, rich in organic material. When rocks containing this organic material are subjected to heat and pressure, the organic compounds break down over time, resulting in oil and natural gas. As the oil and gas are generated, they migrate through the pore spaces of the rock or along fractures until they encounter a structural or stratigraphic trap with an impermeable seal.

The *Mineral Potential Report* identifies high and moderate potential for oil and gas for the planning area. Most of the planning area has a high potential with a variable degree of certainty. It assigns moderate potential to most of Piute County and a relatively small area east of Factory Butte in Wayne County.

CBNG is a gas associated with coal beds. During the coalification process that accompanies burial, organic matter is converted into coal, and natural gas is produced, along with water, carbon dioxide, nitrogen, and heavier hydrocarbon fractions (Rice 2000). A portion of this natural gas becomes trapped as the coal seam is compacted and can later be extracted as an energy resource.

CBNG is produced by pumping water out of the coal, thereby lowering the hydrostatic pressure, which causes the natural gas to desorb from the coal and migrate through the coal cleats and fractures to the production well. Initially, large amounts of water are produced before natural gas can desorb and begin to flow toward the well bore. As the coal beds are de-watered, natural gas production from the well increases over time. Eventually, gas production declines as ground water production diminishes in the last stages of a well's production.

CBNG production poses some significant environmental issues, most notably the production of large volumes of water, particularly in the early stages of well development. Although water produced from CBNG wells can be potable, it is frequently saline to hypersaline and may contain TDS at concentrations up to 170,000 milligrams/liter (mg/L) (USGS 2000). Produced water from CBNG wells can also have high concentrations of dissolved organic constituents and metals. Depending on the water quality, the produced water is disposed of as waste or used for beneficial purposes, although some treatment is often required. Disposal includes surface discharge, including evaporation or injection in subsurface formations. Uses include livestock watering, irrigation, watering artificial wetlands, or water supplies.

Exploration and development of CBNG differs somewhat from conventional gas within the planning area. Two CBNG plays are identified within the planning area, both associated with Cretaceous coal beds. The Uintah and Piceance Basin play is associated with the Ferron Trend that extends approximately from Price southward onto the Wasatch Plateau. The other play is generally on the west side of the Henry Mountains, east of Capitol Reef. The Ferron Trend is assigned a high potential for the occurrence of CBNG, and the play west of the Henry Mountains is assigned a moderate potential, except for low potential near Factory Butte.

An RFD scenario predicting the likelihood of oil and gas exploration and development over the next 15 years within the planning area was developed as part of this planning effort and is included in Appendix 12. The RFD scenario is summarized in the following paragraphs.

The USGS estimates the distribution of undiscovered, technically recoverable hydrocarbon resources in the planning area to be 0 to 20,000 barrels of oil per square mile. As of 2004, some 220 exploration wells had been drilled in the planning area (IHS Energy Well Data 2004). The historical number of wells drilled each year is slightly more than three.

A discovery of oil in 2004 in western Sevier County at the Covenant field near Sigurd has promoted interest in oil and gas exploration in the western part of the planning area. Since then, the interest in leasing, the number of miles of seismic surveys, and the number of exploration wells has increased substantially and focuses mainly on the Sevier and Sanpete valleys, although other areas within the thrust play are being explored.

Since the discovery, a large area of public land near the Sevier and Sanpete valleys has been nominated for leasing, and the bidding for leases has been very competitive. Map 3-11 shows the current leases in the planning area. The RFD scenario assigns a high level of activity (high development potential) and predicts 360 wells to be drilled in the western part of the planning area near the Sevier and Sanpete valleys.

Additionally, 2 other areas have been of interest for leasing in recent years. On the Manti-LaSal National Forest, federal leases are authorized on the Wasatch Plateau and are associated with the Cretaceous Sandstone and CBNG plays. Only a few leases are authorized on the Fishlake National Forest on the Wasatch Plateau or elsewhere in the Forest at this time, but the BLM anticipates additional leasing in these areas in the future. The RFD scenario predicts 49 wells near the southern part of the Wasatch Plateau with a moderate level of activity (moderate development potential).

The other area that has been of interest for leasing in recent years is in the general vicinity of the Dirty Devil River and the benchlands above the river. As of August 2007, there has been no on-the-ground activity.

Aside from the Sevier and Sanpete valleys and the southern Wasatch Plateau, the planning area is assigned a low activity level (low development potential). In these areas, the historic drilling rate is applicable at 3 wells per year or 45 wells during the next 15 years.

As of April 2007, there are 223 oil and gas leases on BLM land, 3 leases on the Fishlake National Forest, and 30 leases on the Manti-LaSal National Forest.

Geothermal Resources

Geothermal resources found on the federal mineral estate are considered leasable minerals. As such, the same laws governing other leasable minerals cover exploration and development of these resources.

Interest in the potential geothermal resources in Utah increased in the early 1970s, and lease applications were filed for all areas around hot springs or with other evidence of geothermal activity, including the hot springs near Monroe and Joseph within the planning area. The Monroe-Joseph Known Geothermal Resource Area (KGRA) was designated in 1974 due to anticipated interest in leasing geothermal resources in the Sevier Valley. The KGRA contained 16,363 acres in 2 separate parcels surrounding the Joseph hot spring and Monroe-Red Hill springs. Designation of this area as a KGRA meant that future leases could be obtained only through competitive bidding. For the town of Monroe, a limited number of gradient holes and one test production hole were drilled under a USDOE grant to explore the potential of using the geothermal resource for space heating. While the drilling did not locate an adequate resource of high enough temperature for the proposed use, the exploration was very limited.

In the 1980s, interest in geothermal resources waned, and in 1988, the KGRA was declassified after a competitive lease sale without any public interest. Currently, federal geothermal resources in the Sevier Valley or elsewhere in the RFO are not leased.

The *Mineral Potential Report* identifies areas with high, moderate, and low potential for the occurrence of geothermal resources in the planning area. In general, the western part of the planning area is assigned to high and moderate potential, and the eastern part is assigned to low potential.

The area with high potential is centered on the Sevier and Sanpete valleys and flanking ranges. The high potential is based on the known hot springs, including Monroe, Red Hills, and Joseph, and a favorable geologic setting with a relatively high heat flow and with faulting that would appear to provide conduits for the migration of geothermal resources. Monroe and Red Hill springs are located one-half mile east of the town of Monroe, while Joseph hot spring is located 5 miles southeast of the Town of Joseph, all in southwestern Sevier County. Maximum water temperature measured at Monroe, Red Hills, and Joseph range from 151° F. to 171° F. (Utah Geological Survey 2004). Reservoir temperatures have been estimated at slightly over 212° F., which is low for energy production; however, the resource potential has not been extensively explored. Commercial development includes the use of the hot springs at Red Hills and Monroe and a spring at Richfield, both non-federal minerals ownership, for heating swimming pools, a direct use.

The area with moderate potential generally encompasses the Southern High Plateaus and adjacent valleys not included in the area of high potential in the western part of the planning area. The eastern part of the planning area is considered low potential. The *Mineral Potential Report* characterizes geothermal resource development as unlikely in the next 15 years. However, the first competitive geothermal resource lease sale will be held this year (2007) for federal minerals at the Cove Fort-Sulphurdale KGRA, west of the planning area in Beaver and Millard counties, and interest in geothermal resources for energy production is increasing statewide.

The lands managed by the RFO are open to geothermal leasing, subject to the oil and gas leasing categories. As previously stated, no federal lands are currently leased for geothermal resources in the RFO.

Oil Shale and Tar Sands

Oil Shale

Oil shale is a very fine-grained, dense, sedimentary rock that is rich in organic material. This organic material can be converted into low viscous oil during thermal decomposition. In the planning area, oil shale deposits occur in the Green River Formation in Sanpete County and Sevier County.

In the planning area, lands with surface exposure of the Green River Formation were withdrawn from lease or other disposal by EO in 1930 in order to reserve the oil shale for the purposes of investigation, examination, and classification. Subsequent EOs and public land laws have modified the original EO. The withdrawal generally overlaps parts of the Gunnison Plateau, the Valley Mountains, and the Wasatch Plateau. The lands withdrawn for oil shale investigation are open to oil and gas as well as sodium leasing but are closed to mineral entry (mining claim location and operations) and certain realty actions. The federal lands withdrawn for oil shale investigation are shown on Map 11 in the *Mineral Potential Report* and are classified as prospectively valuable for oil shale. The *Mineral Potential Report* does not address oil shale because only limited information is available on the mineral potential in the RFO.

Under the Energy Policy Act of 2005, the BLM is required to develop regulations for leasing oil shale deposits. This leasing of oil shale, as well as tar sands, is being addressed in the ongoing Oil Shale and Tar Sands Leasing PEIS for the Western United States (Section 1.6.3 in Chapter 1).

Tar Sands

Tar sands are loosely defined as any sedimentary rock impregnated with heavy, viscous crude oil that cannot be recovered by conventional techniques but rather requires an external energy source (e.g., heat) to mobilize the oil. Tar sands are also called bituminous sandstone, oil sands, and oil-impregnated rocks. In the planning area, the heavy oil is contained in sandstone, not sand as in Alberta, Canada, where these types of resources are currently being developed.

Areas of high and moderate tar sand occurrence potential were identified in the planning area. In eastern Wayne and Garfield counties, high potential is assigned to the Tar Sand Triangle, which is primarily east of the Dirty Devil River, and to the Circle Cliffs in the vicinity of Capitol Reef National Park. The Tar Sand Triangle encompasses approximately 230 square miles with an estimated 16 billion barrels of oil. At the Circle Cliffs, the Waterpocket Fold (Capitol Reef) is the eastern limb of the Circle Cliffs structure, and the western limb is in Grand Staircase-Escalante National Monument. The Circle Cliffs are estimated to contain more than 860 million barrels of oil. The Tar Sand Triangle and the Circle Cliffs, in part, are defined as Special Tar Sand Areas (STSA) because they contain known and delineated tar sand occurrences. In addition to the STSAs, there are indications of tar sand deposits in scattered outcrops along the Waterpocket Fold, and the occurrences are assigned a moderate potential for tar sand resources.

Tar sands contain heavy oil that could be mined or developed by drilling, depending on the depth of the deposit below the surface and the extraction method chosen. In addition, the federal lands with tar sand deposits also have a high potential for oil and gas. In an attempt to address the leasing of both oil and gas and tar sands, the Combined Hydrocarbon Leasing Act was passed in the early 1980s authorizing exploration and development of both conventional oil and gas and tar sands in a combined lease for both, which were called combined hydrocarbon leases (CHL). Existing oil and gas leases within the STSAs were to be converted to CHLs; however, this conversion process was never completed and the market for oil and gas declined starting in about 1985. A number of existing oil and gas leases are pending conversion to CHLs in the STSAs (Maps 10 and 22 of the *Mineral Potential Report*).

Under the Energy Policy Act of 2005, the BLM is required to develop new regulations for leasing tar sand deposits. As stated above, this leasing of tar sands, as well as oil shale, is being addressed in the ongoing Oil Shale and Tar Sands Leasing PEIS for the Western United States (Section 1.6.3 in Chapter 1).

Coal

Significant coal resources are delineated in 3 coal fields within the planning area—the Wasatch Plateau, Emery, and Henry Mountains coal fields (Map 3-12). The coal resources within the planning area were evaluated for development potential based on available coal data; assumptions for depth, thickness, and continuity of the deposits; and assumptions on the parameters for certain mining methods. The most data exist for the Wasatch Plateau coal field; and the least are available for the Henry Mountains. The estimated unleased coal resources with development potential at each coal field are as follows: more than 290 million tons at the Wasatch Plateau, 199 million tons at the Emery, and 1,750 million tons at the Henry Mountains. The coal at the Wasatch Plateau would be mined by underground methods; the Emery, underground mostly (190 million tons); the Henry Mountains, surface and underground methods (466 million tons and 1,284 million tons, respectively).

Federal coal leases were authorized at all 3 coal fields in the past, mainly in the 1970s and early 1980s. Development has only occurred at the Wasatch Plateau coal field. At present, the Wasatch Plateau coal field is the only coal field within the planning area with a producing coal mine. The SUFCO Mine in Sevier County includes 7 federal coal leases and accounts for about one-quarter of the total coal production in Utah; the coal production exceeds any other coal mine in Utah. Approximately, 24,000 acres of public lands are under lease at the SUFCO Mine.

BLM acknowledges that the Flat Canyon Tract for the Skyline Mine is located on the Manti-LaSal National Forest and contains lands in Sanpete County (located in the west part of T. 13-14 S., R. 6 E.) with federal coal reserves. This new tract could have the potential for coal development that is not considered in the current unsuitability reports (Appendix 8).

Production and revenue figures are contained in Table 3-28.

Table 3-28. Sevier County Coal Production[1] (1984–2001)

Year	Units[2]	Revenues[3]
1984	2,141,000	$96,113,384
1985	1,797,000	$74,079,461
1986	2,360,000	$94,657,512
1987	2,228,000	$80,983,867
1988	2,625,000	$82,325,371
1989	3,059,000	$88,794,500
1990	2,887,000	$79,919,360
1991	3,079,000	$81,211,800
1992	2,580,000	$67,144,882
1993	3,553,000	$87,581,011
1994	3,569,000	$81,639,793
1995	3,906,000	$83,269,860
1996	4,214,000	$85,263,758
1997	4,939,000	$97,173,834
1998	5,719,000	$107,867,625
1999	5,763,000	$104,468,169
2000	5,906,000	$102,298,887
2001	6,111,000	$108,531,360

Notes:
1—No coal production was reported in Garfield, Piute, Sanpete, or Wayne counties between 1980 and 2001.
2—Units are shown in short tons (2000 pounds).
3—Revenues are in 2001 dollars.
Source: BLM 2003b.

On the basis of coal resource evaluations prepared in 2004–2005, exploration and development of coal resources in the Wasatch Plateau coal field are anticipated; however, coal resources in the Emery and Henry Mountains coal fields are not anticipated to be developed within the planning time frame, i.e., before 2030. This forecast for coal resources is likely to change because market conditions for coal are likely to change.

Non-Energy Solid Leasable Minerals

Non-energy solid minerals include sodium and potassium. Such minerals in the RFO include salt and alunite. There are currently no prospecting permits or leases for non-energy solid leasable minerals in the RFO. The Sevier and Sanpete valleys, in part, are underlain by deposits of salt and other evaporitic

minerals, and near Marysvale, alunite deposits are associated with the volcanic rocks. Salt is currently mined on private land near Redmond, but there is no current interest in leases on BLM-administered lands. Alunite is an alteration of volcanic rock as clay. Depending on the composition and the proposed use, alunite could be a leasable mineral.

Salt

Saline deposits are loosely defined to include all minerals that have precipitated through evaporation from waters of either marine or continental origin (USGS 1969). Saline potassium minerals, such as sylvite and carnallite, are often referred to as potash, and the most common sodium mineral is halite, which is composed of sodium chloride. Other valuable salts include potassium sulfate, sodium carbonate, sodium sulfate, and salts of magnesium, lithium, bromine, and boron. Saline deposits, explored and prospected for their sodium and potassium content, would be considered as non-energy solid minerals. Within the planning area, salt deposits occur in the Arapien Shale in Sevier and Sanpete valleys and in the Pennsylvanian Paradox Formation in the subsurface in the eastern part of the planning area.

Salt mining has a long history in the Sevier Valley, dating back to 1879; it was the first mineral resource produced in the valley. Salt has been prospected at several locations in the Arapien Shale in the Sevier and Sanpete valleys, but there is only 1 mine now operating, which is the RCS salt mine located on private land near Redmond. This is the only current salt-producing mine in Utah besides those on the Great Salt Lake (UGS 2002).

Areas of high salt occurrence potential were identified in the Sevier-Sanpete Valley and in eastern Wayne County. Development of salt deposits on BLM-administered lands within the planning area is considered unlikely in the next 15 years.

Potassium (Alunite)

Alunite may be a non-energy leasable mineral if it is explored and developed for its potassium content. Alunite is either a vein deposit or a clay alteration product, both associated with Tertiary volcanic terranes near Marysvale. The altered alunite deposits are closely associated with other clays such as kaolinite. In the *Mineral Potential Report*, clays including alunite were considered as clay only, rather than differentiating specific clays as alteration types.

Alunite was historically mined near Marysvale. The vein deposits, southwest of Marysvale, were extensively mined during World War I, as were some altered alunite deposits north and east of Marysvale. The alunite was mined for potassium for use as an explosive material. Subsequently, during World War II, the alunite deposits were investigated as a possible source for alumina; however, alumina deposits in the Pacific Northwest were more prevalent and cheaper to process into aluminum. Following World War II, primarily in the 1950s and 1960s, the deposits were still evaluated as an alumina source as well as for potassium for fertilizer. Since then, given the variable chemical composition of alumina, potassium, and other constituents, the deposits have generated only limited interest.

3.4.6.2 Locatable Minerals

Locatable minerals include base metals (such as copper, lead, and zinc), precious metals (such as gold and silver), and some industrial minerals. Locatable minerals are subject to the U.S. mining laws, including the 1872 Mining Law, and are subject to location as mining claims and mineral entry (patenting). Open, unappropriated public land is open to entry and location, unless it has been withdrawn from the operation of the mining laws. Operations under the mining laws are subject to the "undue and unnecessary" standard in the regulations at 43 CFR Part 3809, and operations in WSAs are subject to the provision under the *Interim Management Policy for Lands Under Wilderness Review (IMP)* regarding non-

impairment of suitability for inclusion in the Wilderness Preservation System. Another locatable mineral management tool is 43 CFR 3715 regulations. These regulations limit use and occupancy of public lands for locatable development to that which is reasonably incident.

Developers of these minerals stake a mining claim (location) over the deposit and then acquire the necessary permits to explore or mine. As of October 2004, there were 4,199 active (recorded) mining claims in the planning area, and 3,158 of those are located on BLM-administered lands (March 2007, LR2000 database) (Map 3-13). In addition, 9 authorized Mining Law Notices are filed in the RFO, 1 plan of operation is pending approval, and 1 plan of operations is pending closure when reclamation is complete (May 2007, LR2000 database).

Metals

Historically, metals have been prospected near Marysvale, the Henry Mountains, and the Colorado Plateau. Historically, gold, lead, and zinc have been mined in the vicinity of the Tushar Mountains near Marysvale; gold and copper have seen limited development in the Henry Mountains; and uranium has been mined in the Antelope Range north of Marysvale and in the Colorado Plateau. These mines were generally small-scale, underground operations.

The *Mineral Potential Report* assigns high, moderate, and low potential for the occurrence of metals in the planning area. The Colorado Plateau in the eastern part of the planning area is rated as having high potential for metals, including uranium, vanadium, and copper (due to favorable sedimentary deposits, known occurrences, and historic mining), as well as gold (due to known occurrences and favorable intrusive rocks). The western part of the planning area, generally near Marysvale, is assigned high potential for metals, including uranium, due to the presence of volcanic and intrusive rocks, known occurrences of precious and base metals and uranium, and historic mining. In the western part of planning area, moderate potential is assigned to the volcanic terrane outside the area of prevalent mineral occurrences and historic mining, and low potential is assigned to the area not associated with volcanic deposits.

The *Mineral Potential Report*, prepared in 2005, is based largely on market conditions in 2003 when metal prices were generally low. Since that time, the market value of uranium and other metals, including gold, has increased significantly, and exploration and development for metals are more likely under current market conditions. A substantial number of new mining claims have been located since 2005, most notably for uranium, and exploration activity for uranium in the RFO has increased. Between October 2004 and March 2007, the number of mining claims increased from approximately 1,000 to 5,000. In September 2007, the RFO granted an operating permit for the Tony M Mine uranium mine in Ticaboo in Garfield County. A few exploratory permits were also issued in 2007. Although development was considered unlikely in the *Mineral Potential Report*, exploration activity is likely to increase, and development is more likely than that reflected in the *Mineral Potential Report* due to current market conditions in 2007.

Gypsum

Gypsum is formed by the evaporation of seawater and precipitation of calcium sulfate. Gypsum frequently occurs interbedded with limestone and calcareous shales. Most gypsum mined in Utah, as well as in the United States, is processed for plaster and used in the manufacture of wallboard, lath, and other prefabricated gypsum products. Raw gypsum is used in Portland cement as a setting retardant and in agriculture as a soil amendment.

Within the planning area, exploration and development of gypsum resources has been focused in the Sevier and Sanpete valleys. Gypsum has been mined from the Arapien Shale since 1918. The gypsum deposits in the Sevier Valley are centrally located in Utah, and wallboard and other products are shipped

to regional markets. Mills for processing gypsum are operated by U.S. Gypsum and Georgia-Pacific Corporation near Sigurd; the primary product being wallboard. In addition, Diamond K has constructed a mill at Richfield that processes pulverized gypsum for pharmaceutical uses; the gypsum for that use is mined within the San Rafael Swell. In Utah, gypsum production was 500,000 tons in 2000 and 390,000 tons in 2001.

In the *Mineral Potential Report*, high potential for the occurrence of gypsum was assigned within the planning area. In the Sevier and Sanpete valleys in the western part of the planning area, high potential is assigned to the known occurrence of gypsum associated with the Arapien Shale. In the eastern part of the planning area, gypsum also occurs in the Summerville and other formations; however, gypsum does not occur in beds that are economic to develop at this time.

Development in the Sevier and Sanpete valleys will likely continue over the next 20 years. The *Mineral Potential Report* considers commercial development elsewhere unlikely.

3.4.6.3 Salable Minerals

Salable minerals are mineral materials, subject to the Materials Act of 1947, the Surface Resource Act of 1955, and the regulations at 43 CFR 3600. Mineral materials include sand, gravel, clay, and stone. These minerals are disposed by sale contracts and by free use to government agencies and non-profit organizations. Disposal sites may be authorized for exclusive use and non-exclusive use; non-exclusive use disposal sites are community pits and common-use areas. The BLM will not dispose of salable minerals in areas not available by law (e.g., wilderness areas) or in areas identified in LUPs as not appropriate for disposal.

As of May 2007, 18 authorized community pits in the RFO provide commodities such as sand, gravel, topsoil, fill material, and stone. There are 7 exclusive, negotiated sales that provide riprap, sand and gravel, oyster shell, humate, and stone; and also 15 exclusive, free-use permits in the RFO that provide sand and gravel and fill material. Most of these mineral material sites are for the disposal of sand and gravel material (LR2000 database).

The FHWA also obtains sand and gravel and other mineral materials for federal highways and federal aid highways. These disposal sites are not authorized as salable minerals under the regulations at 43 CFR 3600. The disposals are authorized as a mineral material ROW under the regulations at 43 CFR 2800. These ROWs are obtained by the FHWA.

Sand and Gravel

Past and present exploration and development of sand and gravel deposits in the planning area has been for local public works projects. The largest single project was the construction of I-70 in the 1970s through the early 1990s. Because sand and gravel are generally the lowest-priced of industrial mineral products, transportation costs from the pit to the point of end use are a large part of the cost to consumers. Consequently, even short transportation distances can adversely affect the cost of the final product, and it is imperative that sand and gravel sources be located as close as possible to the point of use and major roadways. For this reason, the sand and gravel industry is widely dispersed across Utah, and disposal sites are generally associated with roadways and near population centers.

Most sand and gravel disposals in recent years have been to county road departments. Typically, the counties permit disposals between 10,000 and 20,000 cubic yards per year. Commercial disposals vary in volume, and most contracts are issued from community pits where the volume ranges from 30 to 500 cubic yards per individual sale.

Clay

Clay is generally a salable mineral and is used for a variety of commercial and industrial purposes, including bricks, drilling and quarrying mud, sealants, liquid dyes, paints, china, ceramics, absorbents, molecular sieves, fillers, binders, cosmetics, and inert ingredients in pharmaceutical tablets. The end use of the clay is determined by its physical properties and purity. Physical properties that determine clay usage include plasticity, bonding strength, color, vitrification range, deformation with drying and heating, gelation, crystal structure and size, viscosity, and swelling capacity (USGS 1969). Bentonite and bentonitic clays are among the most desirable; they swell when saturated with water and can be used as natural sealants for reservoirs, stock ponds, ditches, and landfills. High-swelling bentonite is used primarily by the petroleum industry as a component of drilling mud and by the iron industry as a binder in casting molds and casts. As discussed under Section 3.4.6.1, alunite may be a non-energy solid leasable mineral if it is explored and developed for its potassium content, or a salable mineral as a clay (as an alteration product of volcanic rocks).

In Utah, the most common use for clay is for brick and tile. Within the planning area, clay has been used for swelling clays such as bentonitic clay, reservoir liner material, Fuller's earth, and other applications. Most of the clay resources in the planning area have a volcanic association.

On the western side of the planning area, high potential for the occurrence of clay has been assigned near Marysvale because of the alteration zones in the Tertiary Volcanics and known clay deposits in the Sevier Valley, which are also associated with volcanic deposits. This high potential includes alunite deposits. Moderate potential is assigned to the area with volcanic rocks, but where clay alteration is unreported. Two active clay mines exist at Box Creek on the Sevier Plateau in the Fishlake National Forest and at the Redmond clay mine north of Redmond on private land. Other clay deposits have been explored and/or mined in the past on a small scale in the western part of the planning area. In the last 3 or 4 years, a clay prospect in the Antelope Range, north of Marysvale, has been explored for the manufacture of cement and other possible uses.

In the eastern part of the planning area, high potential for clay is associated with outcrop (surface exposure) of the Morrison Formation and Dakota Sandstone. These deposits have been prospected mainly for swelling clays with minor, small-scale development, mostly for local use.

As stated in the *Mineral Potential Report*, clay is likely to be developed on BLM-administered land during the planning horizon of 15 years, but such development is likely to remain relatively small scale.

Stone

Stone quarries are found throughout Utah and generally are small-scale operations. Transportation cost is a factor in the location of quarries. Most of the stone quarried in Utah and in the planning area is used by the construction industry for building stone, aggregate (crushed rock), or cement (pulverized limestone). Volcanic tuffs in Sevier and Sanpete counties have been quarried for use as dimension stone, crushed for lightweight aggregate in the manufacture of building block, and used as a soil amendment or as nutritional supplement for certain livestock animals, primarily poultry.

In the planning area, stone has been quarried from the following formations for the specified use:

- Limestone of the Green River Formation—building stone
- Sandstone of Crazy Hollow—building stone
- Limestone of the Flagstaff Formation—rock dust, kiln material, and cement manufacturing
- Tuff of the Moroni Formation—poultry feed and agricultural uses
- Tuff of the Joe Lott Tuff—building stone and crushed aggregate as an insulating block
- Tuff of the Bullion Canyon Volcanics—decorative rock (landscape and aquarium display)

- Sandstone of the Moenkopi Formation—building stone
- Navajo Sandstone—decorative rock.

In addition to quarried stone, the public has used pick-up stone or field stone. This material is generally boulders or cobbles and is present in numerous locations in the planning area. The areas that have the most use for collection are generally close to the population centers, and the material of interest has mainly included basalt, tuff, sandstone, or limestone. The demand has been relatively low, and the material is disposed in small tonnages. Although field stone is present throughout the planning area, the principal areas of interest have been in the Sevier Valley and near Loa.

Most of the stone quarries in the planning area are relatively small disposal sites, generally less than 5 to 10 acres. The disposals from BLM public lands range from a few tons to a few thousand tons per year. Development on a small scale at many quarries is likely to continue.

Humate

Humates are carbonaceous shale associated with weathered coal beds. The material is mined as a dietary colloidal mineral supplement and as a soil amendment for agricultural applications. Humate increases the water holding and ion exchange capacity of the soil, acts as a pH buffer for alkaline soils, and may aid animal and plant growth as humic acids. Most humate in Utah is mined from coal beds in the Ferron Sandstone of the Mancos Shale. The only active mining in the planning area is near Factory Butte in Wayne County.

In the planning area, high potential for occurrence of humate has been assigned to Ferron Sandstone outcrop in the vicinity of Factory Butte, north of the Henry Mountains and to the east side of the Wasatch Plateau. Moderate potential is assigned to the west side of the Henry Mountains, and low potential is identified in the central and western part the Wasatch Plateau.

As stated above, the only authorized active mining for humates in the planning area is north of Highway 24, near Factory Butte; 2 sites are BLM-authorized contracts, and 1 is on State land. The mines are relatively small and only active periodically. Exploration and development are likely to continue near Factory Butte on a small scale and are not considered likely elsewhere in the planning area.

Other Minerals

Other mineral materials considered in the *Mineral Potential Report* include oyster shell, petrified wood, jasper, agate, and chalcedony. Oyster shell from the Dakota Formation has been used for road surfacing in Wayne County. There is also interest in oyster shell for agricultural use. It is considered unlikely that the other mineral materials considered will be developed beyond hobby or casual use within the next 15 years.

3.5 SPECIAL DESIGNATIONS

3.5.1 Wilderness Study Areas

In 1964, Congress passed the Wilderness Act establishing (1) a national system of lands to preserve a representative sample of ecosystems in their natural condition for the benefit of future generations, and (2) a process for reviewing other lands for their wilderness potential. The act originally applied only to national forests, national parks, and national wildlife refuges. With the passage of FLPMA in 1976, Congress directed BLM to also inventory, study, and recommend which public lands under its administration should be designated wilderness.

In 1979, the BLM began a wilderness inventory of 22 million acres of public land in Utah. By 1986, following the inventory and public inventory process, and the settlement of appeals, the BLM designated 11 WSAs within what is now the RFO (Table 3-29 and Map 3-14). These WSAs total 446,900 acres, about 21 percent of the RFO. A discussion of the current resource values and uses in each WSA, established in 1980 under the authority of Section 603(c) of FLPMA, can be found in the *Utah BLM Statewide Wilderness Final Environmental Impact Statement* (BLM 1990b). Those values and resources described in the 1990 document have not changed significantly since that time, as documented in monthly WSA monitoring reports available in the RFO.

Although WSAs are, by definition, roadless, several of the WSAs in the RFO do include inventoried ways. During the 1979–1980 Utah Wilderness Inventory, it was necessary to divide routes used by motorized vehicles into "roads" and "ways." To be considered a road, 3 criteria must be met: (1) constructed; (2) maintained by mechanical means; and (3) regular and continuous use. All other motorized routes were defined as ways, which could be left open to motorized travel as long as their use did not "impair" the suitability of the area for wilderness designation. Decisions on which ways will remain open and which will be closed will be made as part of this land use planning process. The miles of inventoried ways are identified by WSA in Table 3-29. Map 3-10, Route Inventory for the RFO, depicts routes and how they overlay with WSAs.

Table 3-29. Wilderness Study Areas

Wilderness Study Area	Acreage	Number of Inventoried Routes	Miles of Inventoried Ways
Bull Mountain	13,200	7	3.9
Dirty Devil	72,100	21	15.6
Fiddler Butte	74,000	8	5.5
Fremont Gorge	2,800	1	0.2
French Spring/Happy Canyon	24,300	3	3.6
Little Rockies	40,700	3	1.3
Mount Ellen/Blue Hills	81,400	12	9.3
Mount Hillers	19,300	9	6.6
Mount Pennell	77,100	9	8.1
Horseshoe Canyon (south)	39,900	4	5.6
Portion of the Horseshoe Canyon (north)	2,100	0	0

Wilderness Study Area	Acreage	Number of Inventoried Routes	Miles of Inventoried Ways
Total	**446,900**	**77**	**59.7**

FLPMA Section 603(c) directs the BLM to manage the WSAs in a manner that does not impair their suitability for designation as wilderness. The *Interim Management Policy for Lands Under Wilderness Review* (BLM Handbook 8550-1) provides policy guidance to manage WSAs to a non-impairment standard. The wilderness characteristics that must be protected include the appearance of naturalness and outstanding opportunities for primitive and unconfined recreation. The status of the existing WSAs will not change as a result of the Richfield RMP. Only Congress can designate the WSAs as wilderness or release them for other uses.

BLM policies and guidance providing for management of existing WSAs and consideration of values associated with wilderness characteristics in land use planning are detailed in:

- Handbook H-1601-1, *Land Use Planning Handbook*
- Hand book H-8550-1, *Interim Management Policy and Guidelines for Lands Under Wilderness Review*.

The BLM's IMP provides specific policy and guidance for management of most resource values and uses in WSAs. However, VRM decisions and OHV designations and route designations are made during land use planning. A summary of some aspects of WSA management are as follows:

- The non-impairment standard applies to all uses and activities except those specifically exempted from this standard by FLPMA (grandfathered uses and valid existing rights).
- Activities that are permitted in WSAs (except valid existing rights and grandfathered uses) must be temporary, create no new surface disturbance, and not involve the permanent placement of structures. There are exceptions to this standard.
- Grazing, mining, and mineral leasing uses that existed as of the passage of FLPMA (October 21, 1976) may continue in the same manner and degree, even if this would impair wilderness suitability.
- WSAs may not be closed to location under the mining laws in order to preserve their wilderness character (although the wilderness character of the area cannot be impaired through actions to perfect claims located after October 21, 1976). Valid existing rights will be recognized.
- WSAs will be managed to prevent unnecessary and undue degradation, as required by law.

3.5.2 Wild and Scenic Rivers

The Wild and Scenic Rivers Act of 1968 established legislation for a National Wild and Scenic Rivers System to protect and preserve designated rivers throughout the nation in their free-flowing condition and to protect and preserve their immediate environments. The act includes policy for managing designated rivers and created processes for designating additional rivers for the National Wild and Scenic Rivers System. Section 5(d) of the Act directs federal agencies to consider the potential for national wild, scenic, and recreational river areas in all planning for the use and development of water and related land resources.

The first phase of the WSR review was to inventory all potentially eligible rivers within the RFO to determine which of those rivers were eligible for consideration as part of the National Wild and Scenic Rivers System. To be eligible, rivers must be free-flowing and possess at least one outstandingly remarkable value. Outstandingly remarkable values are evaluated in the context of regional and/or national significance, and must be river-related. Each river/segment determined to be eligible is then given a tentative classification based on the current level of human development associated with that river/segment. The tentative classification is based on the criteria listed in the classification table from *Wild and Scenic River Review in the State of Utah* (BLM 1996) as noted below.

- A "*wild*" river is free of impoundments, with shorelines or watersheds essentially primitive, and with unpolluted waters.
- A "*scenic*" river may have some development, and may be accessible in places by roads.
- A "*recreational*" river is accessible by road (or railroad), may have more extensive development along its shoreline, and may have undergone some impoundment or diversion in the past.

The BLM conducted a WSR review as part of this planning process. The BLM inventoried 304 drainages/rivers/streams in the lands managed by the RFO. Of those, 12 segments totaling 135 miles were determined to be free-flowing and possess one or more outstandingly remarkable values, making them eligible for further consideration for inclusion in the National Wild and Scenic Rivers System. The eligible rivers, along with their outstandingly remarkable values, tentative classifications, and river miles, are shown in Table 3-30 and on Map 3-15. Detailed descriptions and analysis can be found in Appendix 2 and Appendix 3. BLM policy requires protection of the outstandingly remarkable values, tentative classification, and free-flowing nature of eligible river segments on a case-by-case basis until a suitability determination is made. For rivers designated as suitable as a result of this planning effort, protections for wild and scenic values will continue, and the decisions in the RMP will support such protection. Rivers designated as not suitable will not be managed for wild and scenic purposes but rather in conjunction with other decisions in the RMP.

Table 3-30. Eligible Wild and Scenic Rivers

River or River Segment	Outstandingly Remarkable Value(s)	Tentative Classification	BLM Miles
Dirty Devil River	Scenic, recreational, geologic, fish and wildlife, cultural	Wild	54
Beaver Wash Canyon	Scenic, ecological	Wild	6.8
Larry Canyon	Scenic, recreational, wildlife, ecological	Wild	4
No Mans Canyon	Scenic, recreational, cultural	Wild	7.1
Robbers Roost Canyon	Scenic, recreational, historic, cultural	Wild	31
Sams Mesa Box Canyon	Scenic and wildlife	Wild	9.5

River or River Segment	Outstandingly Remarkable Value(s)	Tentative Classification	BLM Miles
Twin Corral Box	Scenic and wildlife	Wild	9
Fish Creek	Cultural	Scenic	.25
Fremont River—Fremont Gorge	Scenic	Wild	5
Fremont River—Capitol Reef NP to Caineville Diversion	Scenic and geologic	Recreational	4
Maidenwater Creek	Scenic, recreational, geologic, wildlife, ecological	Scenic	3
Quitchupah Creek	Cultural	Recreational	1.4
Total BLM Miles:			**135.05**

3.5.3 Areas of Critical Environmental Concern

FLPMA defines an area of critical environmental concern (ACEC) as an area "within the public lands where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards" (43 CFR 1601.0-5 (a)). Private lands and lands administered by other agencies are not included in the boundaries of ACECs.

FLPMA states that the BLM will give priority to the designation and protection of ACECs in the development and revision of LUPs. ACECs differ from some other special designations in that designation by itself does not automatically prohibit or restrict other uses in the area. The special management attention is designed specifically for the relevant and important values, and therefore varies from area to area. The one exception is that a mining plan of operation is required for any proposed mining activity that would create surface disturbance greater than casual use within a designated ACEC (in accordance with 43 CFR 3809).

To qualify as a potential ACEC, both relevance and importance criteria outlined in 43 CFR 1610.7-2 must be met. These criteria are defined as:

- **Relevance:** A significant historic, cultural, or scenic value; a fish or wildlife resource or other natural system or process; or a natural hazard must be present.
- **Importance:** The value, resource, system, process, or hazard must have substantial significance and value. This generally requires qualities of more than local significance and special worth, consequence, meaning, distinctiveness, or cause for concern.

3.5.3.1 Existing Areas of Critical Environmental Concern

There are currently 4 ACECs in the RFO. These ACECs, and their relevant and important values, are listed in Table 3-31. Refer to Map 3-16 for their locations.

Table 3-31. Existing Areas of Critical Environmental Concern

Area	Acreage	County	Relevant and Important Values
North Caineville Mesa ACEC	2,200	Wayne	Relict vegetation
South Caineville Mesa ACEC	4,100	Wayne	Relict vegetation
Gilbert Badlands Research Natural Area ACEC	3,680	Wayne	Natural systems or processes—badlands
Beaver Wash Canyon ACEC	4,800	Wayne	Natural processes, riparian
Total Acreage:	**14,780**		

North Caineville Mesa ACEC (2,200 acres)

The 1982 Henry Mountain MFP designated the North Caineville Mesa ACEC as an ACEC to protect the relict vegetation found on the top of the mesa. The ACEC is located north of Highway 24, about 12 miles west of Hanksville. Current management for this ACEC includes the following:

- Closed to OHV use
- Unavailable to livestock grazing
- Consider withdrawing from mineral entry

- Aquire inholdings within the ACEC
- Open to leasing for oil and gas with major constraints (NSO).

South Caineville Mesa ACEC (4,100 acres)

The 1982 Henry Mountain MFP designated the South Caineville Mesa ACEC as an ACEC to protect the relict vegetation found on top of the mesa, as well as the historic resources that include a circa 1920 bilevel stone cabin associated with early area sheep and goat grazing. South Caineville Mesa is located south of Highway 24, about 12 miles west of Hanksville. Located entirely within the Mount Ellen/Blue Hills WSA, the South Caineville Mesa ACEC is subject to management under the IMP (BLM H-8550-1). Current management for this ACEC includes the following:

- Closed to OHV use
- Unavailable for livestock grazing
- Closed to leasing for oil and gas
- Consider withdrawing from mineral entry.

Gilbert Badlands Research Natural Area ACEC (3,680 acres)

The Gilbert Badlands Research Natural Area (RNA) ACEC was designated in 1987 to protect the scientific and educational (research) values of the geomorphology found in the Gilbert Badlands. Located in Wayne County south of Highway 24, the Gilbert Badlands are about 15 miles west of Hanksville. Located entirely within the Mount Ellen/Blue Hills WSA, the Gilbert Badlands ACEC is subject to management under the IMP. Current management for this ACEC includes the following:

- Closed to OHV use
- Closed to leasing for oil and gas
- Consider withdrawing from mineral entry
- No surface disturbing activities
- Acquire inholdings within the ACEC boundary.

Beaver Wash Canyon ACEC (4,800 acres)

Beaver Wash Canyon contains a unique area identified as a cold riparian ecosystem located in an otherwise desert environment. In 1982, it was noted of Beaver Wash Canyon that, “special management is needed to prevent irreparable damage to the ecological refugia (e.g., an isolated habitat that has preserved suitable environmental conditions for those species adapted to it and is unique in its ecological and geographical position in the region), which could be significantly impaired from certain surface disturbing activities” (BLM 1982). Beaver Wash Canyon is a tributary of the Dirty Devil River, east of Highway 95 and about 13 miles southeast of Hanksville. The majority of the Beaver Wash Canyon ACEC (99 percent) is located within the Dirty Devil WSA and is subject to management under the IMP. Current management for this ACEC includes the following:

- Closed to OHV use
- Unavailable for grazing in the majority of the ACEC
- Closed to oil and gas leasing
- Consider withdrawing from mineral entry
- Acquire inholdings within the ACEC boundary.

3.5.3.2 Potential Areas of Critical Environmental Concern

During scoping for the Richfield RMP, the public nominated 30 areas for designation as ACECs. Of these 30 areas, 4 were primarily within the Price FO (with small acreages within the RFO) and were evaluated for relevance and importance by the Price FO. The remaining 26 areas, totaling 1.6 million acres, were

evaluated for relevance and importance by the RFO staff as part of the planning process. Based on these evaluations, the RFO identified 16 areas totaling approximately 886,810 acres as potential ACECs (see Table 3-32 and Maps 2-43 and 2-44). Information concerning all 26 nominated areas, as well as their evaluations, is summarized in Appendix 1. More detailed information can be found in the *Evaluations of Areas of Critical Environmental Concern* report (2005), which is available for review in the RFO.

Table 3-32. Potential Areas of Critical Environmental Concern

Area	Acreage	County(ies)
Badlands Potential ACEC	88,900	Wayne
Bull Creek Archaeological District Potential ACEC	4,800	Wayne
Dirty Devil/North Wash Potential ACEC	205,300	Wayne and Garfield
Fremont Gorge/Cockscomb Potential ACEC	34,300	Wayne
Henry Mountains Potential ACEC	288,200	Wayne and Garfield
Horseshoe Canyon Potential ACEC	40,900	Wayne
Kingston Canyon Potential ACEC	22,100	Piute
Little Rockies Potential ACEC	49,200	Garfield
Lower Muddy Creek Potential ACEC	16,200	Wayne
Old Woman Front RNA Potential ACEC	330	Sevier
Parker Mountain Potential ACEC	107,900	Wayne
Quitchupah Potential ACEC	180	Sevier
Rainbow Hills Potential ACEC	4,000	Sevier
Sevier Canyon Potential ACEC	8,900	Piute and Sevier
Thousand Lake Bench Potential ACEC	500	Wayne
Special Status Species Potential ACEC	15,100	Wayne, Garfield and Sevier
Total Acreage:	**886,810**	

Badlands Potential ACEC (Includes North and South Caineville Mesas and Gilbert Badlands Existing ACECs) (88,900 acres)

Purpose: The purpose of the Badlands Potential ACEC is to recognize and provide special management for relevant and important scenic, special status plant, natural processes (wind erosion), and riparian and relict vegetation values.

Description: The potential ACEC is located in central Wayne County, east of Capitol Reef National Park, north and south of State Highway 24. Notable geographic features include North Caineville Mesa, South Caineville Mesa, Factory Butte, and the surrounding Mancos Shale badlands. Portions of the Badlands potential ACEC are within the Mount Ellen/Blue Hills WSA and, as such, are subject to management under the IMP.

Area: The potential ACEC is defined by Class A Scenery, and the badlands formations and relict vegetation areas within the nominated and existing ACECs named above. The potential ACEC contains additional acreage beyond that of the existing ACECs and overlaps the northern portion of the Mount Ellen/Blue Hills WSA.

Bull Creek Archaeological District Potential ACEC (4,800 acres)

Purpose: The purpose of the Bull Creek Archaeological District Potential ACEC is to recognize and protect the relevant and important archaeological values in the area.

Description: The Bull Creek Archaeological District is located along Bull Creek in the foothills of the Henry Mountains, directly south of Hanksville. It was listed on the NRHP in 1981.

Area: The potential ACEC boundary is coincident with the Bull Creek Archaeological District boundary for which the relevant and important cultural resource values were identified.

Dirty Devil/North Wash Potential ACEC (includes existing Beaver Wash Canyon ACEC) (205,300 acres)

Purpose: The purpose of the Dirty Devil/North Wash Potential ACEC is to recognize and provide special management for relevant and important scenic, cultural, paleontological, wildlife, and SSS values.

Description: The Dirty Devil River and side canyons are located southeast of Hanksville in Wayne and Garfield counties.

Area: The potential ACEC is defined by Class A Scenery, Mexican spotted owl suitable habitat, and desert bighorn sheep crucial yearlong habitat within the nominated areas. The potential ACEC includes the existing Beaver Wash Canyon ACEC. The potential ACEC overlaps portions of the Dirty Devil, French Spring/Happy Canyon, and Fiddler Butte WSAs; thus management would be governed by the IMP for these areas. The Dirty Devil River and several of its side canyons were determined to be eligible as WSRs.

Fremont Gorge/Cockscomb Potential ACEC (34,300 acres)

Purpose: The purpose of the Fremont Gorge/Cockscomb Potential ACEC is to recognize and provide special management for relevant and important cultural, scenic, riparian, plant, and wildlife resources. Relevant and important values were determined by evaluating the Fish Creek Cove/Cockscomb, Fremont Gorge/Miners Mountain, and Fremont Gateway nominated ACECs.

Description: The potential ACEC is located on public lands east of the Red Gate and west of Capitol Reef National Park in the Torrey-Teasdale-Grover area of central Wayne County.

Area: The potential ACEC is defined by mule deer crucial habitat within the boundary of the 3 nominated ACECs. The potential ACEC contains the entire Fremont Gorge WSA, which is subject to management under the IMP. The potential ACEC also contains the Fremont River in Fremont Gorge, identified by the BLM as an eligible WSR.

Henry Mountains Potential ACEC (288,200 acres)

Purpose: The purpose of the Henry Mountains Potential ACEC is to recognize and provide special management for relevant and important scenic, wildlife (bison and deer), SSS (i.e., Townsend's big-eared bat, ferruginous hawk, burrowing owl, and hole-in-the-rock prairie clover), and ecological values. The No Man's Mesa portion of the ACEC would be designated as an RNA.

Description: Discovered by the Powell Expedition in the 1870s, the Henry Mountains, south of Hanksville, tower over the surrounding desert country.

Area: The potential ACEC is defined by crucial bison habitat, crucial mule deer habitat, and Class A Scenery. Other relevant and important values are included within this boundary. The potential ACEC includes portions of the following nominated ACECs: Bull Creek/Birch Creek, Bullfrog Creek, Granite

Creek, Mount Hillers, No Man's Mesa, Ragged Mountain/Slate Creek, and Upper Sweetwater/Tarantula Mesa. The potential ACEC also overlaps all or parts of 4 WSAs: Mount Hillers, Mount Pennell, Bull Mountain, and Mount Ellen/Blue Hills; management of these lands would be governed by the IMP.

Horseshoe Canyon Potential ACEC (40,900 acres)

Purpose: The purpose of the Horseshoe Canyon Potential ACEC is to recognize and provide special management for relevant and important scenic and cultural values, notably Cowboy Cave. Other relevant and important values include riparian corridors and SSS (e.g. Townsend's big-eared bat).

Description: Horseshoe Canyon is a tributary of the Green River in northeastern Wayne County and is noted for its rock art. Part of the canyon is included within Canyonlands National Park.

Area: The Horseshoe Canyon Potential ACEC is defined by the Class A Scenery within the nominated area. Cultural, riparian, and SSS (e.g. Townsend's big-eared bat) values are included within this boundary. The potential ACEC overlaps portions of the Horseshoe Canyon North and Horseshoe Canyon South WSAs, which would be governed by the IMP.

Kingston Canyon Potential ACEC (22,100 acres)

Purpose: The purpose of the Kingston Canyon potential ACEC is to recognize and provide special management for relevant and important riparian and mule deer habitat in the area.

Description: The potential ACEC encompasses the canyon north and south of the Sevier River between the towns of Kingston and Antimony in Sevier County.

Area: The potential ACEC is defined by the mule deer habitat within the nominated ACEC. The riparian area is included in the mule deer habitat boundary. (**Note:** The riparian area is largely in state and private ownership.)

Little Rockies Potential ACEC (49,200 acres)

Purpose: The purpose of the Little Rockies Potential ACEC is to recognize and provide special management for scenic and wildlife values, notably desert bighorn sheep. Other relevant and important values within the ACEC include SSS (Townsend's big-eared bat and hole-in-the-rock prairie clover), and ecologic values.

Description: The potential ACEC is located in the southwest corner of Garfield County, north of Ticaboo. It overlaps the entire Little Rockies National Natural Landmark and most of the Little Rockies WSA, which would be governed by the IMP.

Area: Class A Scenery defines the ACEC boundary.

Lower Muddy Creek Potential ACEC (16,200 acres)

Purpose: The purpose of the Lower Muddy Creek Potential ACEC is to recognize and provide special management for the relevant and important scenic, riparian, and special status plant values in the area.

Description: The potential ACEC is located along Lower Muddy Creek in north-central Wayne County and south-central Emery County.

Area: Class A Scenery defines the ACEC boundary.

Old Woman Front RNA Potential ACEC (330 acres)

Purpose: The purpose of the Old Woman Front RNA Potential ACEC is to recognize and protect the relevant and important relict vegetation in the area. This RNA ACEC would complement the existing National Forest RNA.

Description: The potential ACEC is located in eastern Sevier County adjacent to the Fishlake National Forest.

Area: The potential ACEC is on public land adjacent to the USFS Old Woman Cove RNA in the Fishlake National Forest.

Parker Mountain Potential ACEC (107,900 acres)

Purpose: The purpose of the Parker Mountain Potential ACEC is to recognize and provide special management for sagebrush-steppe habitat and wildlife values, notably Greater sage-grouse, Utah prairie dog, and pygmy rabbit.

Description: Parker Mountain, also known as the Awapa Plateau, is located in western Wayne County, southwest of the town of Loa.

Area: The potential ACEC includes all of the area that was nominated by the public.

Quitchupah Potential ACEC (180 acres)

Purpose: The purpose of the Quitchupah Potential ACEC is to recognize and provide special management for relevant and important cultural resource and riparian values.

Description: Quitchupah Creek is located in eastern Sevier County. The creek flows off the Fishlake National Forest across public lands managed by the Richfield and Price BLM FOs.

Area: The potential ACEC boundary includes the riparian corridors and associated cultural resource sites and areas that have spiritual value to Native Americans.

Rainbow Hills Potential ACEC (4,000 acres)

Purpose: The purpose of the Rainbow Hills Potential ACEC is to recognize and provide special management for relevant and important mule deer habitat, natural systems, and SSS values in the area.

Description: The Rainbow Hills are located just east of Richfield, in a colorful Arapien shale formation. The potential ACEC nomination includes the shale and other lands adjacent to it.

Area: The potential ACEC boundary is defined by the crucial mule deer range. Plant and natural system values are included within this boundary.

Sevier Canyon Potential ACEC (8,900 acres)

Purpose: The purpose of the Sevier Canyon Potential ACEC is to recognize and provide special management for relevant and important mule deer habitat, riparian, and SSS values in the area.

Description: Sevier Canyon (also known as Marysvale Canyon) is a gorge bordering the Sevier River between the towns of Sevier and Marysvale. Big Rock Candy Mountain (privately owned) is located in the canyon.

Area: The potential ACEC boundary is defined by the mule deer habitat and the riparian corridor on public land along the Sevier River. (**Note:** The riparian area is largely in private ownership.)

Thousand Lake Bench Potential ACEC (500 acres)

Purpose: The purpose of the Thousand Lake Bench Potential ACEC is to recognize and provide special management for relevant and important cultural resources, special status plants, and riparian areas.

Description: The potential ACEC is located in southeastern Sevier County, south of Interstate 70 and east of Thousand Lake Mountain.

Area: The potential ACEC is defined by riparian areas and the locations of cultural resources and special status plants.

Special Status Species Potential ACEC (15,100 acres)

Purpose: The purpose of the Special Status Species Potential ACEC is to recognize and provide special management for isolated and scattered locations of specific plant and wildlife species identified in the evaluations of the various ACEC nominations as relevant and important and not included in other potential ACECs. Species include Winkler cactus, Wright fishhook cactus, last chance townsendia, rabbit valley gilia, Cronquist wild buckwheat, basalt milkvetch, hole-in-the-rock prairie clover, Psoralea globemallow, Jane's globemallow, Townsend's big-eared bat, Allen's big-eared bat, big free-tailed bat, fringed myotis, ferruginous hawk, bald eagle, burrowing owl, long-billed curlew, southwestern willow flycatcher, Greater sage-grouse, bluehead sucker, flannelmouth sucker, leatherside chub, and desert night lizard.

Description: See "Purpose" above.

Area: The Special Status and Endemic Species ACEC is represented by documented locations of the above-listed species. In contrast with the other potential ACECs, this ACEC is composed of many small, discrete areas rather than a large contiguous area.

3.5.4 Other Designations

National Trails

National Historic Trails are "extended trails which follow as closely as possible and practicable the original route or routes of travel of national historical significance" (NPS 2001a). The purpose of the National Historic Trails is "the identification and protection of the historic route and its historic remnants and artifacts for public use and enjoyment" (NPS 2001a).

The Old Spanish National Historic Trail, designated December 4, 2002, by the Old Spanish Trail Recognition Act of 2002, is a 2,700-mile trade route extending from Santa Fe, New Mexico, to Los Angeles, California, passing through the states of Colorado, Utah, Arizona, and Nevada. The trail splits into 2 routes before entering Utah and continues through the State of Utah within the planning area (Map 3-24). The trail corridor is defined topographically based on local land features because no actual trail tread or associated sites have been identified within the decision area.

The Northern Route of the Old Spanish National Historic Trail enters Utah near Moab, splits into two sections at Fremont Junction near I-70, and rejoins near the town of Circleville. From there, the Northern Route continues southwest along the Sevier River and U.S. Highway 89, through the Markagunt Plateau along SR 20 in the decision area, and into the Parowan Valley, where it heads southwest out of Utah to rejoin the Armijo Route south of St. George, Utah.

National Scenic Byways

The National Scenic Byways Program was established under the Intermodal Surface Transportation Efficiency Act of 1991 and reauthorized in 1998 under the Transportation Equity Act for the 21st

Century. Under the program, the U.S. Secretary of Transportation recognizes certain roads as National Scenic Byways or All-American Roads based on their archeological, cultural, historic, natural, recreational, and scenic qualities. All-American Roads must exhibit multiple intrinsic qualities. For a highway to be considered for inclusion within the National Scenic Byways Program, it must provide safe passage for passenger cars year-round, it must be designated a State Scenic Byway, and it must have a current corridor management plan in place. Installation of offsite outdoor advertising (e.g., billboards) is not allowed along byways. There are two national scenic byways in the planning area.

All American Road-Scenic Byway 12 (State Route 12). Scenic Byway 12 takes the visitor to the heart of the American West. This exceptional 124-mile route negotiates an isolated landscape of canyons, plateaus, and valleys ranging from 4,000 to 9,000 feet above sea level. The visitor encounters archaeological, cultural, historical, natural, recreational, and scenic qualities while driving this exhilarating byway. The portion on the RFO is the descent from the forested slopes of Boulder Mountain past scenic views of Miners Mountain, the Cocks Comb ridge, and the Red Gate formation to the junction with Utah State Highway 24 at the town of Torrey (near Capitol Reef National Park).

Trail of the Ancients (State Route 95). This allows the visitor to explore the long and intriguing occupation of the Four Corners region by Native American peoples, traveling through the archaeological heartland of America while crossing the beautiful and diverse landscapes of the Colorado Plateau. The RFO portion begins at Hanksville. The Bicentennial Highway, which is a portion of the Trail of the Ancients, runs south with expansive views of the Burr Desert and the Henry Mountains. The Dirty Devil Scenic overlooks at Burr Point and west Angel Point are accessible from the Highway, as is the Bull Creek Pass Backcountry Byway, the Poison Springs road, and the Hog Springs Picnic area and hiking trail.

Utah Scenic Byways

Highways that have been designated by official state declaration for their scenic, historic, recreational, cultural, archaeological, or natural qualities. The byways are paved roads that are generally safe year-round for passenger cars. Installation of offsite outdoor advertising (e.g., billboards) is not allowed along byways.

Capitol Reef Country Scenic Byway. Highway 24 is the only route through the heart of Capitol Reef National Park and leads to Fishlake National Forest, the sprawling San Rafael Swell, and the colorful Maze District of Canyonlands National Park.

Fishlake Scenic Byway (U-25). Fishlake Scenic Byway U-25 runs through the Fish Lake Basin, which is about 8,850 feet in elevation. In the basin lies a geological wonder, a 2,500 acre lake, formed by the shifting of the Earth‘s faults.

BLM Back Country Byways

The Back Country Byway Program was developed by BLM to complement the National Scenic Byway Program. These byways highlight the spectacular nature of the western landscapes. Back Country Byways vary from narrow, graded roads that are passable only during a few months of the year to two-lane paved highways with year-round access. There is 1 BLM Back Country Byway in the planning area.

Bull Creek Pass National Back Country Byway. This Byway winds for 68 miles through Utah’s Henry Mountains. The view from the route includes colorful canyons, steep cliffs, vast badlands, and rugged alpine mountains. The Byway climbs nearly a mile as it loops through this colorful, vibrant mountain range set between Capitol Reef and Canyonlands National Parks.

Utah Scenic Backways

State Scenic Backways are roads that do not generally meet federal safety standards for safe year-round travel by passenger cars and have been designated by official state declaration for their scenic, historic, and recreational qualities. Utah Scenic Backways often require use of four-wheel drive, and road conditions vary with factors such as season and weather. There are 7 Utah Scenic Backways within the planning area.

Cathedral Valley Scenic Backway. The road starts at I-70, runs south approximately 55 miles to Highway 24 one-half mile west of Caineville past the Limestone Cliffs, through the Red Desert, and the Last Chance Desert. There are striking views of the Mussentuchit badlands, and on the NPS lands, the Temple of the Moon and Sun formations are accessible. The road is a single-lane road with a dirt base. High clearance vehicles are recommended.

Cove Mountain Road. The Cove Mountain Road in the Fishlake National Forest extends from Koosharem on SR-62 north to Glenwood on SR-119. The route is particularly popular because of its spectacular autumn scenery and panoramic views of the Sevier and Koosharem Valleys.

Gooseberry/Fremont Road. Beginning 2 miles north of Fremont on SR-72, this Backway runs 40 miles through the Fishlake National Forest to its end at I-70 in Salina Canyon. The abundance of trees makes this road a popular fall color trek.

Kimberly/Big John Road. The route begins at the city of Junction on US-89. Turning onto SR-153, it continues past Puffer Lake and Elk Meadows. On Fishlake National Forest Road, the Backway turns north to Big John Flat and climbs over the Tushar Mountains. The route continues through the historic Kimberly mining district to the freeway interchange near Fremont Indian State Park at I-70.

Notom Road and Burr Trail Backway. Notom Road runs from Utah Highway 24 at the eastern boundary of Capitol Reef National Park to the junction of Burr Trail Road. The Burr Trail runs south to Bullfrog on Lake Powell. The Notom Road segment parallels the Waterpocket Fold and provides an excellent opportunity to view the magnitude of this colorful and desolate rock spine. East of the Backway are expansive views of the Henry Mountains and Mancos Mesa foothills. The Burr Trail road crosses softly rolling Mancos hills and then follows a deeply incised canyon to Lake Powell.

Posey Lake Road Backway. The Scenic Backway starts at the town of Bicknell and ends at the town of Escalante. The portion of the Scenic Backway managed by the RFO crosses the Awapa Plateau, also known as Parker Mountain. This road is primarily single-lane dirt with gravel in places. It is closed in winter. The lands are sagebrush steppe and home to pronghorn antelope, sage-grouse, pygmy rabbits, as well as prairie dogs.

Thousand Lake Mountain Road. From SR-72, 5 miles north of Fremont, this Backway travels southeast through the Fishlake National Forest to join the Cathedral Valley Scenic Backway. The route provides access to Elkhorn Campground in Fish Lake National Forest and continues back to its point of origin at SR-72.

National Heritage Areas

A “national heritage area” is a place designated by Congress where natural, cultural, historic and recreational resources combine to form a cohesive, nationally distinctive landscape arising from patterns of human activity shaped by geography. These areas tell nationally important stories about the nation and are representative of the national experience through both the physical features that remain and the traditions that have evolved within them. There is 1 national heritage area in the planning area.

National Mormon Pioneer Heritage Area. The national designation recognizes the history, architecture, and culture along "the heritage highway," and includes U.S. Highway 89 from Fairview to Kanab, the Boulder Loop (state highways 12 and 24), the All American Road (Highway 12) and the 6 counties through which the route passes: Sanpete, Sevier, Piute, Wayne, Garfield, and Kane.

3.6 SOCIAL AND ECONOMIC CONDITIONS

The socioeconomic study area includes all of 4 counties (Piute, Sanpete, Sevier, and Wayne) and the eastern portion of Garfield County. (As stated previously, there are also 21,500 acres of Kane County within the RMP planning area. However, because those lands lie entirely within Glen Canyon NRA and no decisions within this RMP will affect those lands, Kane County is not included within the socioeconomic study area.) This section summarizes demographic and economic trend information, including descriptions of the key industries in the 5 county socioeconomic study area that could be affected by BLM management actions. Study area industries most affected by BLM land management policies and programs are (1) production agriculture, in particular cattle grazing and production, (2) mining and oil and gas production, and (3) travel, tourism, and recreation. BLM lands provide areas for activities such as hunting and fishing, hiking, camping or picnicking, traditional natural resource uses (e.g., firewood or pine-nut gathering), and sightseeing.

Although some resources managed by the RFO may be of regional or national interest, this Proposed RMP/Final EIS assumes that RFO management decisions primarily affect the economies of the counties and towns within the 5 counties encompassed by the planning area boundary. This section presents baseline information used to help analyze the socioeconomic impacts of the alternatives considered in this Proposed RMP/Final EIS. More detailed information is provided in the *Baseline Socioeconomic Profile* (BLM 2003b), and this section refers to numerous figures and tables from that document.

3.6.1 Social Background

The *Baseline Socioeconomic Profile* (BLM 2003b) discusses characteristics of the study area in some detail. The 5 counties in the study area are predominantly rural, with large land areas and dispersed populations. The number of persons per square mile ranges from 0.9 in Garfield County to 14.3 in Sanpete County, well below state and national averages.

At least half of the lands in each county within the socioeconomic study area are publicly owned and federally managed. As shown in Table 3-33, the socioeconomic study area comprises more than 80 percent federally managed land, with 12.5 percent in private ownership. Lands managed by the RFO total 2.1 million acres, about 39 percent of the planning area.

Table 3-33. Land Ownership in the Socioeconomic Study Area

Area	Total Population (2000 Census)	Land Area (Sq. Miles)	Persons Per Square Mile	Federally Owned Land	Privately Owned Land
Garfield County	4,735	5,176	0.9	90.0%	5.1%
Piute County	1,435	757	1.9	74.3%	12.7%
Sanpete County	22,763	1,598	14.2	51.7%	42.5%
Sevier County	18,842	1,910	9.9	76.0%	19.1%
Wayne County	2,509	2,464	1.0	85.6%	3.5%
Socioeconomic Study Area	**50,284**	**11,905**	**4.2**	**80.7%**	**12.5%**
Utah	**2,193,000**	**84,583**	**25.9**	**63.9%**	**21.6%**

Note: The Garfield County figures include all land in the socioeconomic study area, not just land in the field office study area.
Source: Utah Division of Travel Development 2004; U.S. Census Bureau 2004.

The socioeconomic study area has sustained human populations for thousands of years. The people of this region, dating back to the origins of the Ute, Paiute, Navajo, and Hopi tribes, and even earlier civilizations such as the Fremont and ancestral Puebloan peoples, maintained very close connections to the land. As these native people lived in or moved through the area, the area's plants and animals provided them with food, medicine, and clothing.

European settlement began in 1849 with the establishment of Manti in Sanpete County. Settlement expanded throughout the area over the next 30 years, with Hanksville in eastern Wayne County being settled in 1882. Settlers supported themselves by irrigating the valleys, running livestock on the rangelands, and, to a lesser extent, mining and lumbering. Settlements were closely tied to locations where water was available for farming and forage available for livestock. The Sevier-Sanpete Valley proved fertile land for farm production, whereas the areas around Parker Mountain and Monroe Mountain and extending through what is now Capitol Reef National Park into the Henry Mountains were used for grazing livestock. Some of the current livestock permittees are heirs of families who have grazed stock on the public land for generations.

As early pioneers labored to make a living with agricultural products, prospectors were exploring the mountains of the area in search of metals and minerals that could be sold for a profit. Specifically, what is now Piute County supported a rich mining boom in the late 1800s. With industrialization and mechanization of agriculture, many of the initial pioneer settlements in the region matured. Throughout the 20th century, the roots of the natural resource–related industries and the persons associated with them became well established in the area. Although today, few families earn their livelihoods solely from these basic industries, agriculture and, to a lesser extent, mining are still an integral part of the social structure of the area. Over time, the connection to public lands has changed from economic to social and traditional. The historical uses of public lands that continue today include hunting, wood gathering, pine-nut collecting, family picnics and other family gatherings, wildlife viewing, Christmas tree cutting, and other traditional activities. These uses provide opportunities for socialization within and between families and other social groups. Large population centers resulting from industrialization and urbanization have heightened social regard for areas without much human development. The socioeconomic study area provides several opportunities for such areas. Use of these areas for outdoor recreation activities has increased over the past 20 years. Major recreational resources in the area, such as the Paiute and Great Western Trails, hiking and canyoneering opportunities in the Dirty Devil region, and bison viewing and hunting in the Henry Mountains attract many people each year to the region. Hunting and fishing opportunities in the socioeconomic study area and in the nearby Fishlake and Manti-LaSal National Forests complement camping, wildlife viewing, and other recreational activities, as people look for a break from urban life. Residents in the socioeconomic study area understand and enjoy the lifestyle that comes with living in the area. The recreation component has created yet another connection to the public lands that is important not only to local residents but also to those who come from other areas in Utah, other states, and other countries to enjoy these natural resources.

A statewide social survey was conducted by Utah State University (USU) in 2007 to assess the ways in which Utah residents use and value public land resources and their views about public lands management. A complete analysis of the results had not been completed as of February 2008. "Public lands." as described in the study, consist of all federal and state managed lands, not just BLM lands. Surveys were mailed to a random sample of residents of all 29 Utah counties. According to the authors, the study and sample sizes are designed to produce results generalizable at the statewide level, with generalization increasingly risky as the sample area diminishes. For example, the data may lose much of their statistical validity at the individual county level. The areas sampled do not necessarily coincide with FO planning area boundaries—that was not the focus of the study. Nonetheless, the study provides current and interesting results not available elsewhere and shows the dependence of Utah residents on public lands for a variety of economic and recreational pursuits. Appendix 17 contains initial summary results for

Garfield, Piute, Sanpete, Sevier, and Wayne counties. Due to the considerations noted above, these results cannot be used as the basis for significant conclusions regarding the relationship of local residents to RFO lands. Thus, the preliminary USU results do not affect the formulation of alternatives in Chapter 2 or the analysis of impacts in Chapter 4.

USU also reviewed the socioeconomic analysis in the RFO DRMP/DEIS in a report under contract to the Six County Association of Governments, which includes Piute, Sanpete, Sevier, and Wayne counties. A section of the report contains summaries of two earlier social surveys, both also conducted by USU for (or included portions of) Wayne and Garfield counties in 2001 and 2004. These two studies show Wayne and Garfield County residents have similar dependence on public lands for a variety of economic and recreational pursuits as found in the results in the 2007 statewide social survey.

Another section of the report summarizes a large body of information on OHV users that provides additional insights into the social significance of OHV use in the socioeconomic study area. It cites several regional studies, not in the socioeconomic study area, that found that riders place great importance on the social and environmental aspects of the OHV experience, OHV activities tend to be more popular with rural residents than those from urban areas, and OHV management concerns vary on topics such as facility development, enforcement, and environmental items. The report also cites national studies that show there has been a large increase in OHV participants and riders over the past 20 years. This body of OHV-related research suggests OHV recreation has become an important way for local residents, and OHV recreationists worldwide, to connect to the public lands.

3.6.1.1 County Perspectives

The following statements, taken from county plans, represent county perspectives on the management of public lands occurring in the 5 county area. County plans are summarized in Appendix 13.

Garfield County: "The county deems it critical that Resource Management Plans provide for range improvements, that current grazing on public lands be preserved, that county water rights be maintained, that public lands timber harvesting be continued, and that mining leases be considered and encouraged" (Garfield County 1998).

Piute County: "It is in the county's best interest that BLM and USFS lands be managed for multiple use and that access is maintained on public lands" (Piute County 1994).

Sanpete County: "The culture and sentiment of Sanpete County residents is such that they…will want input on the management and use of public lands in the county" (Sanpete County 1997).

Sevier County: "Multiple use activities on public lands in Sevier County should continue and should include uses such as agricultural grazing, fishing and hunting, mineral exploration and mining, recreation, wildlife habitat, and timber sales"(Sevier County 1998).

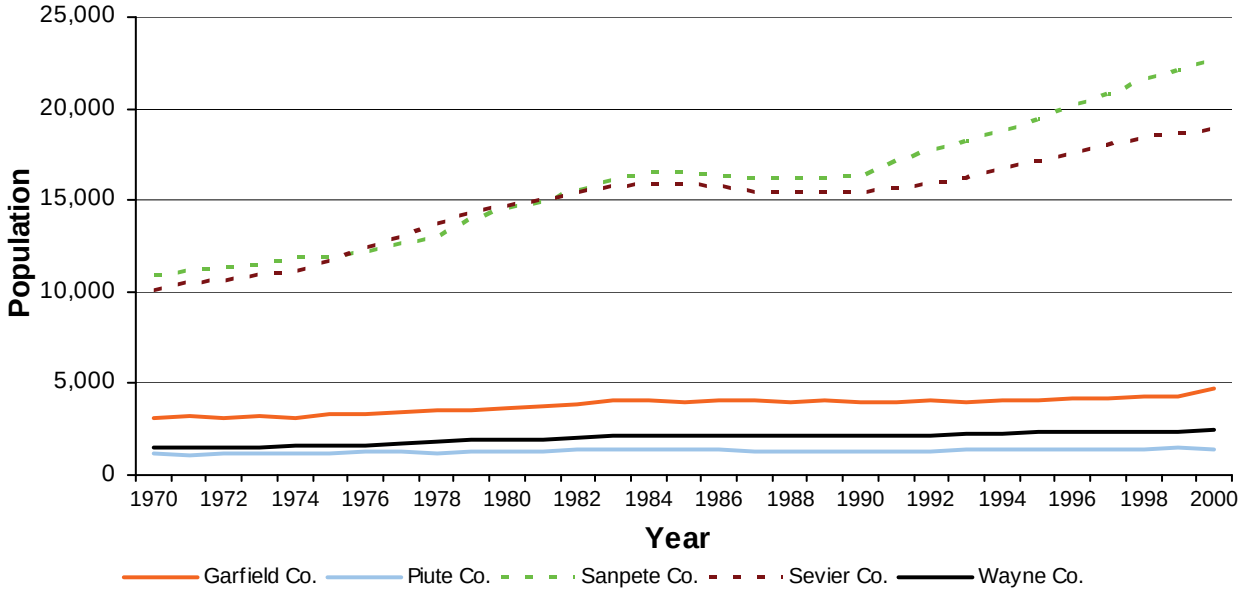
Wayne County: "It is the county's desire that each resource be managed for the optimal economic return, but in ways which do not sacrifice the county's natural aesthetic values" (Wayne County 1994).

3.6.1.2 Population

Approximately 85 percent of the people residing in the socioeconomic study area live in Sanpete and Sevier counties. In contrast, the eastern portion of the socioeconomic study area is very sparsely populated because of its isolation, aridity, and ruggedness.

Population trends for the 5 counties are plotted in Figure 3-20. Population growth in the 5 counties is on an upward trend, although Garfield, Piute, and Wayne counties are growing at a very slow rate. The higher growth rates of Sanpete and Sevier counties have been sustained by increased business opportunities following the construction of I-70, construction of an annex of the Utah State Prison, and expansion of other business related to retail trade.

Figure 3-20. Population Estimates, 1970–2000



Source: BLM 2003b.

The population of the socioeconomic study area increased by almost 8 percent during the 1980s and grew by 24.9 percent in the 1990s. Population growth in the socioeconomic study area lagged significantly behind the state's population growth during the 1980s but outpaced the state's growth during the 1990s (BLM 2003b). The 1980s were marked by a 6.5-percent decline in net migration (i.e., the net result of persons moving in and out of the area). However, the 1990s showed a marked change in this trend. Net migration increased in the socioeconomic study area by nearly 16 percent. These trends are similar to the statewide pattern during both the 1980s and 1990s, with the socioeconomic study area doubling the statewide trends (BLM 2003b).

3.6.2 General Economic Characteristics

All of the counties within the socioeconomic study area, as well as the entire State, showed large increases in the civilian labor force throughout the 1990s. Only Sevier and Garfield counties had percentage increases lower than the State of Utah as a whole, and their increases were more than 20 percent and nearly 19 percent, respectively. The 9-year average annual increase in the civilian labor force for the socioeconomic study area was 2.53 percent, slightly higher than the State's 2.49 percent average. The increases varied within the socioeconomic study area, from a 2.1-percent annual increase in Garfield County to a 3.75-percent increase in Wayne County (BLM 2003b).

Total employment in the socioeconomic study area increased more than 50 percent over the last decade, from 17,202 jobs in 1990 to 25,876 jobs in 2000. This growth rate exceeded the national rate but lagged behind the Utah growth rate.

Throughout the 1990s, unemployment in the socioeconomic study area showed a downward though sometimes unsettled trend. Except for 1993, when the national and socioeconomic study area rates were the same, the unemployment rate for the socioeconomic study area was higher than the national and state rates. All trends show a reversal between 2000 and 2001, with marked increases in the unemployment rate. The yearly average unemployment rate for the years 1990–2001 was 7 percent for the socioeconomic study area, 5.5 percent for the nation, and 3.9 percent for the State of Utah (BLM 2003b).

Total personal income for the socioeconomic study area well exceeded $844 million for 2000, an increase of more than $254 million since 1990. This represents a total growth in real (inflation-adjusted) personal income of more than 43 percent in 10 years (BLM 2003b).

The socioeconomic study area has shown minor changes in how income is earned. Labor income (e.g., wages, salaries, and self-employment income) during 2000 was 63.6 percent of total personal income, whereas investment income was 17.1 percent. These numbers represent small decreases over the last two decades. During the same period, transfer payment income (largely derived from Social Security or other retirement benefits, Medicare and Medicaid benefits, and other income support and assistance) has absorbed the decreases in investment and labor income, growing from 14.6 percent of total personal income in 1980 to 17.5 percent in 1990 and 19.3 percent in 2000 (BLM 2003b). These trends are similar to state and national trends.

Per capita income (in 2002 dollars) in the socioeconomic study area has increased at a much slower rate than statewide per capita income, resulting in an increasingly large disparity between socioeconomic study area and state income levels. In 1990, socioeconomic study area per capita income was 79.3 percent of the per capita income throughout the state. That percentage decreased to 70 percent of state per capita income in 2000. In 2000, the socioeconomic study area per capita income was $16,793, significantly below the national figure ($30,150) and state figure ($23,977).

All 5 counties had a higher poverty rate (percentage of individuals living in households with an income below thresholds defined by the U.S. Census Bureau) than state or national rates in 1989, but in 1999, Sevier County and Garfield County each had a lower poverty rate than the United States. The percentage of individuals within the socioeconomic study area living below the poverty level declined from 17 percent in 1989 to 13 percent in 1999 (BLM 2003b).

3.6.2.1 Employment and Earnings by Industry

Rural areas like the socioeconomic study area are often more dependent on traditional natural resource-based industries, such as mining and agriculture. For example, the socioeconomic study area is more dependent on mining and agriculture jobs than the State of Utah as a whole. Mining and farm employment made up just over 2 percent of Utah's total employment in 2000, whereas those same industries provided for just over 11 percent of jobs in the socioeconomic study area. The mining and agriculture industries are also important as an economic base for the socioeconomic study area because they export their goods outside the region and in turn support ancillary industries such as retail trade, construction, and services (BLM 2003b).

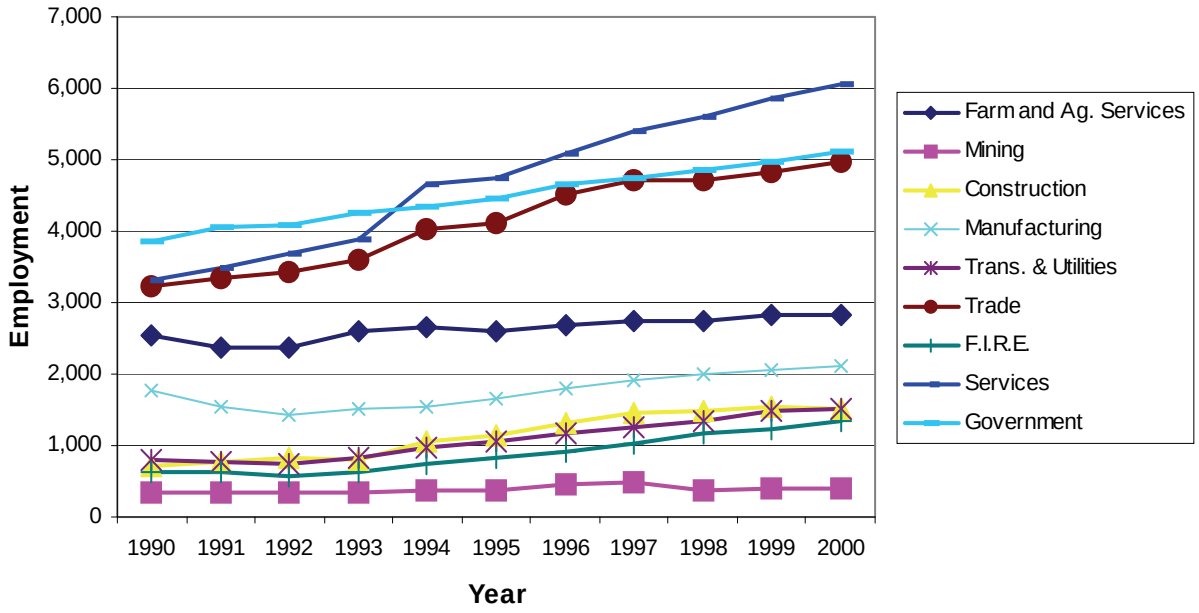
Services, government, and retail trade comprised more than 60 percent of employment in the socioeconomic study area in 2000 (BLM 2003b). Figure 3-21 shows the trends in employment by industry during the last decade. Industries showing the greatest numerical increase in employment from 1990 to 2000 included services (2,744 new jobs), trade (1,751 new jobs), government (1,253 new jobs), and construction (815 new jobs). Industries reporting the slowest growth in the socioeconomic study area included farm and agricultural services and mining, both increasing by 12 percent over the last decade.

Transportation and utilities; construction; and finance, insurance, and real estate (F.I.R.E.) showed significant growth but accounted for relatively small percentages of total employment.

Mineral development, transportation, and utilities continue to provide the highest-paying jobs in the socioeconomic study area, although both industries have experienced a decline in average real earnings per job over the last decade, as shown in Figure 3-22. The government and manufacturing sectors have shown growth in average real earnings per job and now provide the third and fourth highest paying jobs in the area. Farm and agricultural services, trade, and F.I.R.E. reported the lowest earnings per job throughout much of the latter part of the 1990s. Agriculture and mining showed the most volatility in average earnings per job over the course of the decade.

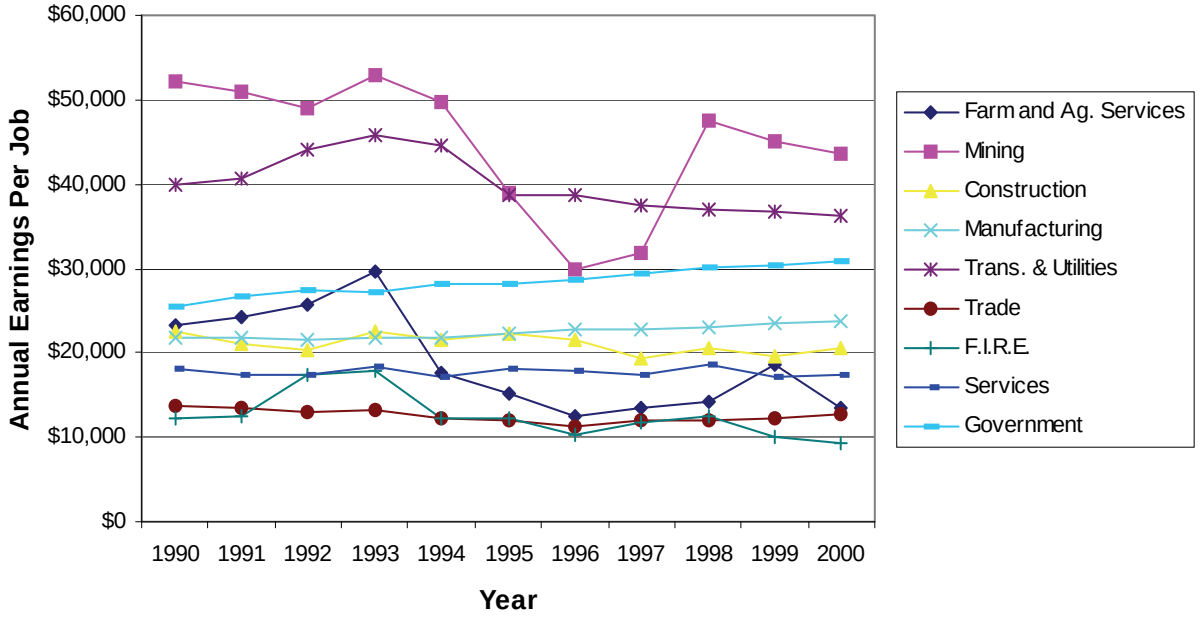
Gross real earnings for all socioeconomic study area industries grew by more than 40 percent from 1990 to 2000. Earnings from government jobs have consistently been higher than all other industries, totaling more than $157 million in 2000 and accounting for nearly 29 percent of all earnings. The service sector has become an integral part of the economy, growing from $59 million and 16 percent of total earnings in 1990 to $104 million and 21 percent of total earnings in 2000. After growing sharply (207 percent) in the 1980s, earnings from jobs in the farm sector dipped (by 36 percent) in the 1990s. The farm sector accounted for $38 million and 7.2 percent of total socioeconomic study area earnings in 2000. Mining also reported a decline in real earnings during the last decade, falling by 6 percent, from $18 million in 1990 to $17 million (3.1 percent of total earnings) in 2000 (BLM 2003b).

Figure 3-21. Trends in Full-Time and Part-Time Employment by Industry, 1990–2000



Source: BLM 2003b.

Figure 3-22. Average Earnings Per Job (2002$)



Source: BLM 2003b.

3.6.2.2 Government Revenue from Natural Resources

Revenues to the Federal Government

The Federal Government's Minerals Management Service (MMS) collects royalties and rents from leases of federal lands for production of coal, oil, gas, and other leasable minerals. For coal leases issued or readjusted after August 4, 1976, the royalty rate is 8 percent of the value of production for underground mines and 12.5 percent for surface mines. However, there are no surface coal mines in the planning area at this time. Coal leases are offered competitively with a bonus bid in either dollars-per-acre or cents-per-ton; the minimum bid is $100.00 per acre or its equivalent in cents-per-ton. Annual rents on a coal lease are $3.00 per acre. For oil and gas leases issued after December 22, 1987, royalties are 12.5 percent of the amount or value of production. Oil and gas leases are offered competitively with a minimum bonus bid of $2.00 per acre. The rents for an oil and gas lease are $1.50 per acre for the first 5 years and $2.00 per acre for subsequent years. Royalties, bid prices, and rents are collectively referred to as lease revenue. Leases for non-energy solid leasable minerals are also subject to royalties, competitive bidding as required by regulation, and rents, but at this time, there are no non-energy solid mineral leases in the planning area.

Revenues, collected as royalties, rents, and bonus bids on a federal lease, are distributed within the Federal Government and to the State of origin of the revenue. The Federal Government returns 50 percent of the lease revenues to the State of origin of the revenues, and the other 50 percent is variously distributed within the Federal Government, depending on the type of lease, which varies depending on when the lease was issued. In Utah, the revenues distributed to the State flow through the Utah Department of Community and Economic Development to various state funds and other state and local agencies.

The Federal Government also receives bonus bid revenue from minerals underlying former federal lands exchanged with the State of Utah's SITLA in accordance with the Utah School and Lands Exchange Act of 1998 (Public Law 105-335). Only two counties in the state, Carbon and Emery, produce significant mineral lease revenue from exchanged lands. In the socioeconomic study area, only Sevier County has produced any such revenue in FY 2000 through FY 2004—a total of $500.00 in FY 2000. Because this was lease revenue and not bonus bid revenue, all of this revenue went to SITLA (none to the Federal Government).

Table 3-34 provides figures by county for mineral revenue collections by MMS and subsequent disbursements to the State, over the time period FY 2001 through FY 2004.[1] These figures encompass all federal lands in the included counties. Tracing revenues and disbursements to BLM lands in particular was not feasible for this study. Most of the revenue in Table 3-34 is generated in Sevier County as a result of coal production.

The RFO collects fees and other revenues for a variety of uses on BLM lands. These revenue sources include ROW rents, recreation fees, mineral material and vegetative material permit fees, and grazing fees.

Table 3-35 provides figures for the most significant local BLM revenue sources for FY 2002 to FY 2004. The table also indicates how each type of revenue is distributed. Most revenue from sales of land and materials, along with ROW rents, leaves the RFO. Recreation fees are retained. Fifty percent of grazing fees go to the BLM Range Improvement Fund and are returned to the district of origin.

1 *Revenue generated from oil production at the Covenant Field after FY 2004 is not included in the table.*

Table 3-34. Mineral Lease and Bonus Revenues Collected and Disbursed by the Federal Government, State of Utah Fiscal Years 2001–2004

State Fiscal Year and Collections/Disbursements	Garfield County	Piute County	Sanpete County	Sevier County	Wayne County	Study Area Total	State Total
2001							
Federal Mineral Lease Collections	$798,451	$2,290	$106,725	$10,467,631	$17,779	$11,392,876	$92,368,329
Federal Mineral Bonus Collections	$0	$0	$0	$3,203,946	$0	$3,203,946	$6,723,764
Total Federal Collections	$798,451	$2,290	$106,725	$13,671,577	$17,779	$14,596,822	$99,130,862
Total Disbursed to State	$399,226	$1,145	$53,362	$6,835,788	$8,890	$7,298,411	$49,565,431
2002							
Federal Mineral Lease Collections	$241,975	$2,345	$39,163	$4,350,638	$1,431	$4,635,553	$27,021,330
Federal Mineral Bonus Collections	$0	$0	$0	$3,203,946	$0	$3,203,946	$3,526,947
Total Federal Collections	$241,975	$2,345	$39,163	$7,554,584	$1,431	$7,839,499	$30,548,276
Total Disbursed to State	$120,988	$1,173	$19,581	$3,777,292	$716	$3,919,749	$15,274,138
2003							
Federal Mineral Lease Collections	$526,921	$2,371	$3,746	$10,121,739	$0	$10,654,777	$63,953,116
Federal Mineral Bonus Collections	$111,054	$0	$163,070	$3,447,920	$1,431	$3,723,475	$15,767,107
Total Federal Collections	$637,975	$2,371	$166,816	$13,569,660	$1,431	$14,378,252	$79,720,223
Total Disbursed to State	$318,988	$1,185	$83,408	$6,784,830	$716	$7,189,126	$39,860,112
2004							
Federal Mineral Lease Collections	$576,836	$2,436	$1,552	$8,375,727	$0	$8,956,551	$115,121,675
Federal Mineral Bonus Collections	$27,845	$0	$297,448	$3,621,065	$1,908	$3,948,266	$19,310,291
Total Federal Collections	$604,681	$2,436	$299,001	$11,996,792	$1,908	$12,904,817	$134,431,966
Total Disbursed to State	$302,340	$1,218	$149,500	$5,998,396	$954	$6,452,409	$67,215,983

Note: All figures are rounded to the nearest dollar.
Source: Utah Division of Housing and Community Development (2004). State receipts data grossed-up to federal collections based on 50–50 state-federal split (U.S. Minerals Management Service 2004b).

Table 3-35. Richfield Field Office Revenue Collections, Federal FY2002–FY2004, and Primary Distribution of Funds

Type of Revenue	Data Source	2002	2003	2004	Distribution (3)
ROW and communication site annual rents	1	$71,693	$71,203	$61,648	To national BLM account and Federal Treasury general fund
Commercial/group SRPs; campground fees	2	$207,394	$99,964	$109,833	Retained by BLM (Recreation Fee Demo Program)
Little Sahara recreation site entrance fees	1	$5,089	$0	$0	Retained by BLM (Recreation Fee Demo Program)
Mineral material permit fees (sand and gravel, stone, soil, and other)	1	$8,725	$21,599	$14,036	76% to U.S. Bureau of Reclamation's Reclamation Fund, 20% to Federal Treasury General Fund, 4% to state
Vegetative material permit fees (native seed collection, firewood, posts/poles, Christmas trees, and other)	2	$10,633	$3,767	$3,476	76% to U.S. Bureau of Reclamation's Reclamation Fund, 20% to Federal Treasury General Fund, 4% to state
Sale of public land	1	$0	$167,440	$0	76% to U.S. Bureau of Reclamation's Reclamation Fund, 20% to Federal Treasury General Fund, 4% to state
Grazing fees, related maintenance, and trespass fees	1	$87,826	$41,360	$68,019	50% to BLM Range Improvement Fund (returned to the district of origin), 37.5% to Federal Treasury General Fund, 12.5% to state
ROW (primarily monitoring fees)	1	$40,604	$36,019	$0	Retained by BLM
Road maintenance (vegetative materials)	1	$6,323	$1,566	$1,397	Retained by BLM

Sources:
1 – Data provided by RFO accounting office, October 2004; figures are net collections taking into account reversals and transfers.
2 – Figures provided by RFO resource specialists, October/November 2004.
3 – BLM National Business Center, Collections and Billing Branch, interviews November 2004 and "Distribution of Receipts Synopsis."

Revenues to State Government

As noted above, the Federal Government, through the MMS, pays the State of Utah 50 percent of the mineral lease and bonus revenues it collects from federal leases in the state. These disbursements are shown in Table 3-36. State exchange lands, as noted above, produce negligible revenue in the socioeconomic study area. Other lands in the socioeconomic study area administered by SITLA may produce mineral revenues, but because these lands are not managed by the BLM, these data were not collected for this study.

The State of Utah collects several taxes and fees that derive from natural resources on both private lands and public lands:

- **Mining Severance Tax.** The tax is 2.6 percent of the taxable value of all metals or metalliferous minerals sold or otherwise disposed of (Utah Code 2004). Every person or business engaged in mining metals or metalliferous minerals must file an annual report with the Utah State Tax Commission. However, the first $50,000 of value is exempt from the tax.
- **Oil and Gas Severance Tax.** The tax is 3 or 5 percent, depending on the value at the well per barrel of oil or per million cubic feet of gas, and 4 percent for natural gas liquids, minus certain credits and reductions (Utah Code 2004). Statewide severance tax revenue totaled $18,893,082 in FY 2002 and $26,745,279 in FY 2003 (Utah State Tax Commission 2003). The state does not report this revenue by county. However, production from the socioeconomic study area for FY 2000 to FY 2003 was limited to Garfield County, averaging about 1.5 percent of state production for oil, and considerably less than 0.001 percent for gas (UDOGM 2004). Thus, oil and gas severance tax revenue to the State from the socioeconomic study area had been negligible. However, in FY 2004, the Covenant Field was discovered in Sevier County, providing a second source of oil production in the socioeconomic study area and a new severance tax revenue stream to the State. Statewide severance tax revenue totaled $71,513,869 in FY 2006 and $65,429,873 in FY 2007 (Utah State Tax Commission 2008). The large increase in severance tax is mainly due to increases in prices of crude oil (Utah State Tax Commission 2008). While oil and gas production in Garfield County slightly declined over the time period FY 2004 to FY 2007 compared with its production levels in FY 2003, Covenant Fields oil production increased dramatically accounting for about 1.1 percent of state production in FY 2004 and reaching 9.3 percent in FY 2007 after peaking at 11.5 percent of state production in FY 2006 (UDOGM 2008). As a result, oil severance tax revenue to the State from the socioeconomic study area has been growing in recent years.
- **Coal Severance Tax.** Utah does not have a state severance tax on coal.
- **Oil and Gas Conservation Fee.** The fee is 0.2 percent of the value at the well (Utah Code 2004). Statewide conservation fee revenue totaled $1,710,219 in FY 2002 and $1,943,755 in FY 2003 (Utah State Tax Commission 2003). The State does not report this revenue by county. Conservation fee revenue to the State from the 5 county area has been negligible in recent years for the same reason noted for the severance tax.
- **Income Taxes.** State income tax rates vary depending on individual or corporate status, type of corporation, taxable income, and other factors. The state requires 5-percent withholding on most mineral production income (Utah Code 2004). The State does not report state income tax revenue derived from income on natural resources in the 5 county area by county, and total revenue from this source cannot be reliably estimated for this study.

Revenues to Local Governments

Most of the federal and state mineral revenue is disbursed to local government. The major means for the disbursements are as follows:

- **UDOT.** Most of Utah's share of federal land mineral lease revenue is deposited in the state Mineral Lease Account. In addition, 39.5 percent of state exchange land mineral lease revenue (minus 3 percent taken by SITLA for administration) is deposited in the Mineral Lease Account. Forty percent of the funds in the Mineral Lease Account are returned to the county of origin through UDOT in proportion to the amount generated by that county.
- **Permanent Community Impact Fund.** A total of 32.5 percent of the revenue in the Mineral Lease Account (plus a remainder after other funds are paid, if available) goes to this special fund set up by the Utah Legislature to award grants and loans to state and local agencies that are socially or economically affected by mineral resource development. In addition, 12.16 percent of exchange lands bonus revenue goes into the Community Impact Fund. The funds are awarded competitively and can be used for planning, construction, and maintenance of public facilities, and provision of public services.
- **Special Service Districts.** Approximately 5 percent of the revenue in the Mineral Lease Account is distributed to 11 counties that are affected by mineral extraction but receive limited funds through UDOT or the Community Impact Fund. These counties include 4 of the 5 counties in the planning area—Garfield, Piute, Sanpete, and Wayne. Each county receives an equal base payment and a portion based on population.

Table 3-36 shows these distributions of mineral lease and bonus revenues by county for recent years.

Table 3-36. Distribution of Mineral Revenues by County, State of Utah Fiscal Years 2001–2004

Data Source	Revenue Source	Garfield County	Piute County	Sanpete County	Sevier County	Wayne County	Study Area Total	State Totals
FY2001								
1	State Distribution to Counties—UDOT	$219,434	$458	$21,138	$2,073,944	$3,556	$2,318,530	$20,609,660
2	State Distribution to Special Service Districts	$168,349	$132,727	$374,995	$0	$143,686	$819,757	$2,476,644
3	State Distribution to Counties—Community Impact Fund	$127,000	$176,000	$4,450,000	$4,160,000	$100,000	$9,013,000	$34,274,472
Sum of Above Distributions*		**$514,783**	**$309,185**	**$4,846,133**	**$6,233,944**	**$247,242**	**$12,151,287**	**$57,360,776**
FY2002								
1	State Distribution to Counties—UDOT	$138,518	$0	$13,797	$1,779,957	$902	$1,933,174	$11,120,386
2	State Distribution to Special Service Districts	$99,391	$76,910	$222,204	$0	$84,227	$482,732	$1,476,957
3	State Distribution to Counties—Community Impact Fund	$28,916	$0	$160,000	$1,027,500	$430,000	$1,646,416	$20,933,850
Sum of Above Distributions*		**$266,825**	**$76,910**	**$396,001**	**$2,807,457**	**$515,129**	**$4,062,322**	**$33,531,193**
FY2003								
1	State Distribution to Counties—UDOT	$154,878	$615	$1,324	$1,614,650	$0	$1,771,467	$16,221,449
2	State Distribution to Special Service Districts	$136,263	$105,442	$304,637	$0	$115,473	$661,815	$2,024,878
3	State Distribution to Counties—Community Impact Fund	$697,700	$0	$918,000	$8,992,961	$207,000	$10,815,661	$38,410,192
Sum of Above Distributions*		**$988,841**	**$106,057**	**$1,223,961**	**$10,607,611**	**$322,473**	**$13,248,943**	**$56,656,519**
FY2004								
1	State Distribution to Counties—UDOT	$148,853	$486	$309	$1,672,796	$0	$1,822,444	$25,564,750
2	State Distribution to Special Service Districts	$216,541	$167,563	$484,112	$0	$183,503	$1,051,719	$3,217,821
3	State Distribution to Counties—Community Impact Fund	$59,000	$980,000	$1,532,400	$892,000	$1,390,000	$4,853,400	$28,797,224
Sum of Above Distributions*		**$424,394**	**$1,148,049**	**$2,016,821**	**$2,564,796**	**$1,573,503**	**$7,727,563**	**$57,579,795**

*Counties may benefit from additional mineral revenues distributed by other state funds/agencies.
Sources:
1. Spreadsheets provided November 2004 by Kevin Anderson, Financial Manager, UDOT. Also available at http://www.dot.utah.gov/index.php/m=c/tid=135 (accessed November 4).
2. Spreadsheets provided November 2004 by Arthur Peterson, HCD Accountant, Utah Department of Community and Economic Development.
3. Utah Department of Community and Economic Development, Division of Community Development. Legislative Report of the Permanent Community Impact Fund. Reports for FYs 2001–2004 used.

The State of Utah assesses the value of natural resource properties—specifically oil and gas wells, metal mines, coal mines, sand and gravel mines, and nonmetal mines. County treasurers then set and collect taxes from these properties. On public lands, the taxes are based on either—(a) the value of equipment on the site or (b) discounted cash flow from production if the well or mine is producing—whichever is greater. Table 3-37 shows the natural resource property tax amounts collected by the 5 counties in the planning area in 2003 for all lands. A breakdown for BLM lands only is not available. Natural resource properties are a significant source of tax revenue for local government, totaling $1.3 million in the 5 county area in 2003. This represents 5 percent of all property taxes collected by local government (i.e., real and personal property taxes, taxes on utility and natural resource properties, and motor vehicle fees in lieu of taxes). Of this amount, coal mines contributed 70 percent, with nearly $908,144 in taxes paid on coal mines in Sevier County, the third-highest coal-producing county in the State.

Table 3-37. Property Taxes Charged Against Natural Resource Property, 2003

Area	Oil and Gas Extraction	Metal Mines	Coal Mines	Sand and Gravel	Non-Metal Mines	Total Natural Resource Taxes	Total as Percentage of Total Property Taxes
Garfield	$67,885	$53,556	$0	$8,582	$0	$130,023	3.2%
Piute	$0	$7,446	$0	$0	$1,557	$9,003	1.4%
Sanpete	$212	$347	$0	$22,113	$24,165	$46,837	0.5%
Sevier	$0	$477	$908,144	$21,429	$186,229	$1,116,279	11.0%
Wayne	$0	$0	$0	$1,131	$2,499	$3,630	0.3%
Total-Study Area	**$68,097**	**$61,826**	**$908,144**	**$53,255**	**$214,450**	**$1,305,772**	**5.1%**

Source: Utah State Tax Commission 2004

A source of local government revenue directly attributable to the public lands in each of the counties is Payments In Lieu of Taxes (PILT). PILT payments are made by the Federal Government to compensate counties for lost property tax revenue attributed to federal lands, which are not taxable. PILT payments are calculated using a complex formula that considers numerous factors, including acreage of eligible lands; population; and other federal transfers, such as mineral royalties. In FY 2004, PILT payments for all federal lands in the 5 county socioeconomic study area totaled nearly $2.5 million—$113,302 to Piute County, $240,126 to Wayne County, $428,693 to Garfield County, $724,561 to Sanpete County, and $951,083 to Sevier County (USDI 2004). These payments are from all federal lands and therefore cannot be readily attributed to BLM specifically.

Mineral Economics

The mineral industries produce direct and indirect labor earnings that circulate throughout the socioeconomic study area. Mining is a cyclical industry; in the past, mineral development has played a smaller role in the economy of the socioeconomic study area than at the present time. Coal production is at record levels, and there is continuing activity in mining of aggregate, salt, and gypsum. Mining and mining-related employment makes a significant contribution to Sevier County. There are undeveloped mineral resources located throughout the socioeconomic study area. Development of these resources is dependent on economic and other factors within and outside the area.

The main mineral production in the socioeconomic study area is the coal resource within Sevier County. Sevier County is the third-highest producer of coal in Utah and contains the highest-producing coal mine in the State: the SUFCO Mine in Convulsion Canyon. Between 1984 and 2001, coal production rose and

fell from year to year, with a low production value of $67.1 million in 1992 and a high production value of $108.5 million in 2001 (BLM 2003b).

Oil production in the 5 county area (Sevier, Garfield, and Sanpete counties are the only producing counties) generated nearly $5 million in sales in 2001 (BLM 2003b). Gas production, which occurs only in Garfield and Sanpete counties, is associated with the production of oil and generated $33,764 in sales in 2001 (BLM 2003b). Production in Sanpete County is from 1 well that has minor production on an intermittent basis. Production in Garfield County is primarily oil at the Upper Valley field in the western part of the county, outside the planning area. The Covenant Field in the Sevier Valley is the newest discovery of oil in the State, increasing production of oil in the State by more than 11 percent in FY 2006 then slightly decreasing to about 9 percent in FY 2007 (UDOGM, 2008). The discovery of oil at the Covenant Field has increased interest in leasing and exploration in the western part of the planning area. It should be noted that Garfield County's oil and gas production occurs in the western part of the county, outside the planning area, and a large portion of the oil production in the Sevier Valley is located on lands not managed by BLM. Recent drilling in the Sevier Valley area could lead to increased exploration and development within the planning horizon. Increased leasing activity has occurred in the Sevier–Sanpete Valley.

Grazing Economics

The farm sector, which includes grazing on public lands, provided 2,508 jobs in the 5 county area throughout 2000. Although this number is marginally higher than numbers for 1980 and 1990, total employment in the farm sector has dropped from nearly 16 percent in the area in 1980 to nearly 10 percent in 2000 (BLM 2003b). Total earnings in the farm sector were reported as approximately $38.6 million during 2000, or 7.2 percent of total earnings in the 5 county area (BLM 2003b). These figures result in an average yearly income of $15,385 for jobs in the farm sector. Total numbers of cattle in the 5 county area have remained mostly constant over the past 14 years, whereas the number of sheep has declined by more than 35 percent (BLM 2003b).

Within the RFO, the number of permitted AUMs available for livestock grazing has been constant at 109,951 to as far back as at least 1988. An AUM is a standardized measure of the amount of forage necessary for the sustenance of one cow unit or its equivalent (e.g., 5 sheep) for 1 month. Active use, as represented by the number of AUMs licensed (purchased) yearly, has increased from a low of nearly 38,000 in 1990 to a high of nearly 76,600 in 2001. The discrepancy between permitted AUMs and active AUMs can be attributed to the variability of range conditions year to year, fluctuations of prices in the livestock markets, individual permittees taking voluntary nonuse, or combinations of the 3. BLM grazing fees rose to their highest point ($1.98 per AUM) in the mid-1990s but quickly declined and have held steady at or near the base rate of $1.35 per AUM through 2004. The number of livestock operators using BLM lands managed by the RFO has increased steadily, from a low of 120 in 1990 to a high of 148 in 1999 (BLM 2003b).

Calculation of the value of livestock grazing within the RFO is based on the 10-year average of active AUMs (see the livestock grazing section of this chapter). Active AUMs in this period averaged 50,827 for cattle and 9,756 for sheep. The average value of production per AUM in 2003 dollars for the State of Utah is $41.22 for cattle AUMs and $22.93 for sheep AUMs, based on the methodology described in the *Socioeconomic Baseline Report*. Applying these values to the active AUM figures shows that the average value of production for livestock grazing within the RFO in recent years is about $2.1 million per year for cattle and $223,700 for sheep in 2003 dollars (Table 3-38). Combined with information on livestock production across the entire 5 county socioeconomic study area (BLM 2003b, USDA 2004; both updated to 2003 dollars), these data show that 1.5 percent of the $154.2 million 10-year annual average of cash receipts for livestock and livestock products can be attributed to grazing on BLM lands. However, this small figure may not reflect the full significance of grazing on BLM lands; for instance, this grazing could

be critical to certain operators at certain times of the year when other forage or feed is unavailable or expensive.

Table 3-38. Value of Grazing Output on Richfield Field Office Public Lands

Stock Type	Active (Licensed) AUMs*	Estimated Value of Production per AUM (2003$)*	Value of Grazing Output (2003$)
Cattle	50,827	$41.22	$2,095,100
Sheep	9,756	$22.93	$223,700
Total	**60,583**		**$2,318,800**

Notes: 10-year Average 1994–2003
Source: USDA 2004.

Recreation and Tourism Economics

Recreation visitation to the 5 county socioeconomic study area has declined in the past several years, mirroring trends for the state and nation. Figures from the Utah Division of Travel Development (2004) indicate visitation to most area state and national parks peaked in 1999 and in most cases has declined steadily through 2002 (Grand Staircase-Escalante National Monument—minus 41 percent, Yuba State Park—minus 22 percent since peak in 2000, Capitol Reef National Park—minus 19 percent, Glen Canyon NRA—minus 19 percent, Canyonlands National Park—minus 17 percent, Goblin Valley State Park—minus 13 percent, and Palisade State Park—minus 5 percent since peak in 2000). Visitation continued to decrease through 2007 with minus 17 percent in Capitol Reef National Park, 10 percent in Canyonlands National Park, and 26 percent in Glen Canyon NRA. Despite these declines, the recreation and tourism-related sectors have the greatest potential for growth among sectors that use public land resources. Long-term increases in recreation visits are likely a result of projected state and regional population growth and an aging population that will demand increased opportunities for leisure and recreation.

Employment and earnings provided by recreation and tourism are typically within the service and retail sectors, although not all employment and earnings from these sectors can be directly attributed to tourism and recreation. The Utah Division of Travel Development (2004) estimates that there were 2,979 travel and tourism-related jobs in the 5 county area in 2003. According to the Division, 44 percent of total employment in Garfield County in 2003 occurred in tourism-related jobs. Figures for this measure for other counties are as follows: Wayne County—26 percent; Piute County—17 percent; Sevier County—17 percent; and Sanpete County—7 percent. For all 5 counties, the *2007 Economic Report to the Governor* (Utah Governor's Office of Planning and Budget 2007) estimates that 15.4 percent of all jobs (in 2005) were in the leisure and hospitality industries; this is more than double the percentage for Utah as a whole (7.3 percent). The Division estimates that travelers spent a total of $92 million in the 5 county area in 2003, resulting in $1.9 million in tax revenues to local governments.

Recreation participation and visitor days (i.e., 12 hours of participation in any recreational activity) for the lands managed by the RFO for FY 2001 through FY 2004 are detailed in Table 3-23. For the FY ending September 30, 2004, the greatest number of recreationists participated in driving for pleasure (132,195), camping (105,128), picnicking (81,055), hiking/walking/running (66,189), and OHV/ATV use (63,834), whereas the greatest number of visitor days were spent camping (102,144), driving for pleasure (55,034), backpacking (51,610), hiking/walking/running (31,507), and using OHVs (cars/trucks/SUVs) (31,836).

3.6.3 Environmental Justice

"Environmental justice" refers to the fair and equitable treatment of individuals regardless of race ethnicity, or income level, in the development and implementation of environmental management policies and actions. In February 1994, President Clinton issued EO 12898, Federal Actions to Address Environmental Justice in Minority and Low Income Populations. The objective of this EO is to require each federal agency to "make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low income populations" (EO 12898, 1994).

Where the impacts of a proposed federal action may involve such populations, an analysis of the potential for disproportionate impacts and meaningful community outreach and public involvement is required.

3.6.3.1 Minority Populations

BLM IM 2002-164, Guidance to Address Environmental Justice in Land Use Plans and Related NEPA Documents, provides policy and guidance for addressing environmental justice in BLM land use planning. IM 2002-164 defines minority persons as "Black/African American, Hispanic, Asian and Pacific Islander, American Indian, Eskimo, Aleut and other non-white persons." Further, IM 2002-164 indicates that an area should be considered to contain a minority population when either the minority population of the affected area exceeds 50 percent, or the percentage of minority population in the affected area is meaningfully greater than the percentage in the general population.

Populations of the 5 counties encompassed within the socioeconomic study area are predominately Caucasian and non-Hispanic. All 5 counties have a larger proportion of Caucasian residents than does the State. Table 3-39 summarizes the population by race and ethnicity in 2004.

Table 3-39. Racial and Ethnic Groups for Richfield Planning Area Counties and Utah (Percentage of Population)

Race or Ethnicity	Garfield County	Piute County	Sevier County	Sanpete County	Wayne County	State of Utah
Caucasian persons	97.4%	98.4%	97.0%	96.6%	99.0%	93.8%
African American persons	0.2%	0.1%	0.3%	0.5%	0.2%	0.9%
American Indian/Alaska Native	1.8%	1.2%	1.8%	1.0%	0.3%	1.3%
Asian persons	0.4%	0.1%	0.3%	0.7%	0.0%	1.9%
Native Hawaiian, or Pacific Islander	0.0%	0.0%	0.1%	0.7%	0.3%	0.7%
Persons reporting two or more races	0.2%	0.1%	0.5%	7.6%	0.2%	1.3%

Race or Ethnicity	Garfield County	Piute County	Sevier County	Sanpete County	Wayne County	State of Utah
Persons of Hispanic or Latino origin	3.3%	5.0%	2.8%	7.6%	2.6%	10.6%
White persons, not Hispanic	94.5%	93.7%	94.5%	89.4%	96.4%	83.8%

Source: U.S. Census Bureau, 2004.
Notes:
1—Detail may not add up to 100% due to rounding.
2—Hispanic breakout is separate because Hispanics can be of any race.
3—Figures for Garfield County represent the entire county, not just the portion within the planning area.

As Table 3-39 shows, the percentage of minority residents does not exceed 50 percent of the total population in any of the 5 counties in the socioeconomic study area. Thus, none of the 5 counties contain a minority population that is meaningfully greater than the general population.

3.6.3.2 Low-Income Populations

With respect to low-income populations, IM 2002-164 indicates that low income populations can be identified according to poverty thresholds published by the U.S. Census Bureau. In addition, the IM notes that "when considering these definitions, it is important to recognize that some low-income and minority populations may comprise transitory users of the public lands and thus not be associated with a particular geographic area."

As shown in Table 3-40, 10 percent of the persons living in Utah had incomes below the poverty level in 2003. Persons with incomes below the poverty level in the counties within the planning area ranged from 10 to 13.8 percent. For the purposes of this analysis, this range was not determined to represent a substantial concentration of persons living in poverty or to be meaningfully greater than the statewide percentage.

Table 3-40. Persons Below the Poverty Level for Richfield Socioeconomic Study Area by County (Percentage of Population, 2003)

Income	Garfield County	Piute County	Sevier County	Sanpete County	Wayne County	State of Utah
Persons below poverty level	10.0%	13.8%	11.8%	13.5%	11.5%	10%

3.7 HEALTH AND SAFETY

3.7.1 Introduction

A major priority in land management for the RFO is ensuring health and human safety on its public lands. The BLM's goals are to effectively manage hazardous materials and safety hazards on the public lands to protect the health and safety of public land users; protect the natural and environmental resources; minimize future hazardous materials and related risks, costs, and liabilities; and to mitigate physical hazards in compliance with all applicable laws, regulations, and policies. The BLM follows its national, state, and local contingency plans as they apply to emergency responses. These plans are also consistent with federal and state laws and regulations.

3.7.2 Hazardous Materials

Hazardous materials are generally defined as a usable product or substance that may cause harm to humans, natural resources, or the environment when spilled, released, or contacted. Hazardous materials are used in everyday activities and may be in the form of a solid, liquid, or gas. Regardless of their physical state, hazardous materials may be toxic, flammable, combustible, reactive, and/or corrosive. These can include, but are not limited to, discarded chemicals, chemical spills, and discarded wastes. Once hazardous materials are disposed of, spilled, or dumped, they are classified as "hazardous waste." Hazardous waste problems within the RFO can result from programs conducted by state and local governments, by local businesses and industries, and/or by illegal dumping of hazardous materials on lands administered by the BLM. In coordination with cooperating agencies, BLM-administered public land sites contaminated with hazardous wastes would be reported, secured, and cleaned up according to applicable federal and state regulations and contingency plans. Parties responsible for contamination would be liable for damage assessment, removal, and restoration costs as prescribed in federal and state regulations. Currently no hazardous waste sites listed on the National Priority List or Superfund Cleanup List exist within the RFO.

3.7.2.1 Potential Hazards

The various hazardous waste generators pose a potential threat to the health and safety of area residents, visitors, and to the physical environment itself. Both commercial and illegal activities can lead to the creation of hazardous waste sites. Spills, illegal dumping, and the discovery of abandoned hazardous materials are likely to occur within the RFO. Contaminants from these sites can pose an imminent threat to public safety and adversely impact the environment by affecting soils, ground water, air, and surface water quality. Potential hazardous waste generators within the RFO include the following: oil and gas drilling operations, natural gas pipelines, mining operations, uranium tailings, storage tanks, landfills, and illegal dumps.

3.7.2.2 Hazardous Materials Management

The RFO Hazardous Materials Program is responsible for hazardous materials handling, storage, transport, and emergency response. Several state and federal mandates, authorities, and handbooks provide the BLM with management guidelines, objectives, and actions pertaining to hazardous materials management. The federal and state prescribed mandates ensure the RFO's compliance with applicable laws and regulations.

3.7.3 Abandoned Mines

The early mining practices within the planning area were subject to minimal safety and environmental regulations. Prior to 1981, the BLM did not regulate surface disturbance related to mining operations and did not have regulations for public safety in association with mining operations. Prior to 1981, mine openings such as shafts, adits, and other access to mine workings, were left open in many cases when the mining operations ceased. These open, abandoned mine workings are a safety and/or health concern to the public because the workings can pose a risk of serious injury and/or toxic threat to humans. In addition, abandoned mines can contribute heavy metals and other contaminants to surface and ground water. This uncontrolled drainage can pose a health risk to humans and be a source of environmental degradation.

The BLM has conducted inventories of abandoned mine sites and some remediation, such as stabilizing sites, closing mine openings, and/or reclaiming mine-related land disturbances within the RFO. In the RFO, the areas most likely to have abandoned mine openings are near Marysvale and the Henry Mountains. In the 1990s, many abandoned mines around Marysvale were closed as part of Abandoned Mined Land projects completed by the State of Utah in cooperation with the BLM; however, many abandoned mine workings are still present. The BLM and the State will continue to inventory and close abandoned sites that are a safety and/or health concern for the public and an environmental concern.

3.7.3.1 Potential Hazards

Abandoned mine sites may pose hazards to human health, the environment, and physical safety. Threats to health and the environment include acid drainage, heavy metal contamination, metal-contaminated tailings impoundments, stored chemicals, and leaking containers. Changes in the chemical composition or soil loss near abandoned mine sites can result in alterations or loss of natural habitat for native wildlife. Abandoned mines may also affect surface and ground water. The impacts to water quality are generally the result of contaminated sediments or metal salts that can affect human health, fisheries, wildlife, and vegetation. Contaminants from tailings impoundments, waste rock piles near abandoned mill sites, and mine workings can become airborne or water transported and become a risk to public health. Releases of hazardous substances from waste piles and acid drainage can affect lands beyond abandoned mine sites.

Open, abandoned, underground mines are unstable; mine adits (horizontal openings at the surface) may collapse, internal supports for levels (passages within the mine) may fail, and mine shafts (vertical openings at the surface) and winzes or raises (vertical connections between mine levels) may be obstructed or unseen. Toxic or lethal air conditions may exist due to low concentration of oxygen or high concentrations of other gases. Exposure to radiation in the mine, particularly radon gas, can be a hazard, especially in abandoned uranium mines in southern Utah.

Abandoned, unreclaimed surface mines can include hazards related to physical safety. Such features could include abandoned unstable highwalls, waste dumps, and other slopes, and can also include equipment.

Water can be a hazard in flooded underground mines; the water may cover and conceal sharp or other hazardous objects and winzes or raises to a lower level. Water at surface mines can also be a hazard and safety risk by concealing objects or concealing abrupt changes in surface.

Hazardous wastes, such as explosive materials and chemicals could be present. Explosive materials can be a safety hazard and can be in a deteriorated, unstable condition. Containers of chemicals can be damaged, in a state of deterioration, or otherwise leaking. Tanks, holding or processing ponds, or other fluid containment structures may have lost integrity and may allow for leakage and seepage into soils,

transport by surface and ground water, or other contamination of the environment and threat to human health. Illegal dumping of hazardous wastes within abandoned mines is also a possibility.

3.7.3.2 Abandoned Mine Management/Reclamation Activities

The BLM has recently developed the Abandoned Mine Lands program (AML) that addresses the environmental and safety hazards associated with AML sites on public lands. Once the sites are identified, they are prioritized and appropriate actions are taken on those historic mine sites that pose health and safety risks. The BLM's priority for reclamation of environmentally contaminated sites is based on risk assessments that address threats to human health and the environment. For example, abandoned mine land sites that affect water quality are usually a greater concern and receive a higher priority for reclamation than those that do not affect water quality. See Chapter 2 for AML program priorities.

Richfield Field Office
Proposed Resource Management Plan & Final Environmental Impact Statement

Volume 2 of 3

August 2008

BUREAU OF LAND MANAGEMENT | UTAH

Richfield Field Office

BLM Mission

To sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

BLM-UT-PL-08-004-1610
UT-050-2007-090 EIS
FES 08-25

United States Department of the Interior
BUREAU OF LAND MANAGEMENT

Utah State Office
P.O. Box 45155
Salt Lake City, UT 84145-0155
http://www.blm.gov

IN REPLY REFER TO:

UT-050-1610-012J

Dear Reader:

Enclosed is the Proposed Resource Management Plan (PRMP) and Final Environmental Impact Statement (FEIS) for the Richfield Field Office. The Bureau of Land Management (BLM) prepared the PRMP/FEIS in consultation with cooperating agencies, taking into account public comments received during this planning effort. This PRMP/FEIS provides a framework for the future management direction and appropriate use of BLM-administered lands and resources located in Sanpete, Sevier, Piute, Wayne, and Garfield counties, Utah. The document contains both land use planning decisions and implementation decisions to guide the BLM's management of the Richfield Field Office. The PRMP/FEIS is open for a 30-day review and protest period beginning the date the U.S. Environmental Protection Agency (EPA) publishes the Notice of Availability of the FEIS in the *Federal Register*.

This PRMP/FEIS has been developed in accordance with the National Environmental Policy Act of 1969 (NEPA) and the Federal Land Policy and Management Act of 1976 (FLPMA). The PRMP/FEIS is largely based on Alternative B, the Preferred Alternative in the Draft RMP and EIS, which was released in October 2007. This PRMP/FEIS contains the proposed plan and potential impacts of the proposed plan. The alternatives presented in the Draft RMP/EIS are also provided for comparative purposes. Major comments received during the public review period of the Draft RMP/EIS and responses to these comments are provided on an attached CD. To aid the reader, substantive changes made between the Draft RMP/EIS and the PRMP/FEIS are described in Chapter 1 and are detailed in Appendix 20.

Pursuant to BLM's planning regulations at 43 CFR 1610.5-2, any person who participated in the planning process for this PRMP and has an interest which is or may be adversely affected by the planning decisions may protest approval of the planning decisions within 30 days from date the Environmental Protection Agency publishes the Notice of Availability in the *Federal Register*. For further information on filing a protest, please see the accompanying protest regulations in the pages that follow (labeled as Attachment 1). The regulations specify the required elements of your protest. Take care to document all relevant facts. As much as possible, reference or cite the planning documents or available planning records (e.g. meeting minutes or summaries, correspondence, etc.). To aid in ensuring the completeness of your protest, a protest check list is attached to this letter (labeled as Attachment 2). If your protest does not include all of the elements outlined in 43 CFR 1610.5-2 the BLM will not respond to your protest.

E-mailed and faxed protests will not be accepted as valid protests unless the protesting party also provides the original letter by either regular or overnight mail postmarked by the close of the protest period.

Under these conditions, the BLM will consider the e-mailed or faxed protest as an advance copy and will afford it full consideration. If you wish to provide the BLM with such advance notification, please direct faxed protests to the attention of Brenda Hudgens-Williams- BLM protest coordinator at 202-452-5112, and e-mailed protests to: Brenda_Hudgens-Williams@blm.gov.

All protests, including the follow-up letter (if e-mailing or faxing) must be in writing and mailed to the following address:

Regular Mail:	Overnight Mail:
Director (210)	Director (210)
Attention: Brenda Williams	Attention: Brenda Williams
P.O. Box 66538	1620 L Street, N.W., Suite 1075
Washington, D.C. 20035	Washington, D.C. 20036

Before including your address, phone number, e-mail address, or other personal identifying information in your protest, be advised that your entire protest – including your personal identifying information – may be made publicly available at any time. While you can ask us in your protest to withhold from public review your personal identifying information, we cannot guarantee that we will be able to do so.

The BLM Director will make every attempt to promptly render a decision on each protest. The decision will be in writing and will be sent to the protesting party by certified mail, return receipt requested. The decision of the BLM Director shall be the final decision of the Department of the Interior.

Upon resolution of all land use plan protests, the BLM will issue an Approved RMP and Record of Decision (ROD). The Approved RMP and ROD will be mailed or made available electronically to all who participated in the planning process and will be available to all parties through the "Planning" page of the BLM national website (*http://www.blm.gov/planning*), or by mail upon request.

Unlike land use planning decisions, implementation decisions are not subject to protest under the BLM planning regulations, but are subject to an administrative review process, through appeals to the Office of Hearings and Appeals (OHA), Interior Board of Land Appeals (IBLA) pursuant to 43 CFR, Part 4 Subpart E. Implementation decisions generally constitute the BLM's final approval allowing on-the ground actions to proceed. Where implementation decisions are made as part of the land use planning process, they are still subject to the appeals process or other administrative review as prescribed by specific resource program regulations once the BLM resolves the protests to land use planning decisions and issues an Approved RMP and ROD. Implementation-level decisions in the PRMP/FEIS are indicated by *italic text* and an asterisk (*) in Chapter 2. The Approved RMP and ROD will also clearly identify the implementation decisions made in the plan that may be appealed to the Office of Hearing and Appeals.

Sincerely,

Selma Sierra
Utah State Director

Attachment 1

[Code of Federal Regulations]
[Title 43, Volume 2]
[Revised as of October 1, 2002]
From the U.S. Government Printing Office via GPO Access
[CITE: 43CFR1610.5-2]

TITLE 43--PUBLIC LANDS: INTERIOR

CHAPTER II--BUREAU OF LAND MANAGEMENT, DEPARTMENT OF THE INTERIOR

PART 1600--PLANNING, PROGRAMMING, BUDGETING--Table of Contents

Subpart 1610--Resource Management Planning

Sec. 1610.5-2 Protest procedures.

(a) Any person who participated in the planning process and has an interest which is or may be adversely affected by the approval or amendment of a resource management plan may protest such approval or amendment. A protest may raise only those issues which were submitted for the record during the planning process.

(1) The protest shall be in writing and shall be filed with the Director. The protest shall be filed within 30 days of the date the Environmental Protection Agency published the notice of receipt of the final environmental impact statement containing the plan or amendment in the Federal Register. For an amendment not requiring the preparation of an environmental impact statement, the protest shall be filed within 30 days of the publication of the notice of its effective date.

(2) The protest shall contain:

(i) The name, mailing address, telephone number and interest of the person filing the protest;

(ii) A statement of the issue or issues being protested;

(iii) A statement of the part or parts of the plan or amendment being protested;

(iv) A copy of all documents addressing the issue or issues that were submitted during the planning process by the protesting party or an indication of the date the issue or issues were discussed for the record; and

(v) A concise statement explaining why the State Director's decision is believed to be wrong.

(3) The Director shall promptly render a decision on the protest. The decision shall be in writing and shall set forth the reasons for the decision. The decision shall be sent to the protesting party by certified mail, return receipt requested.

(b) The decision of the Director shall be the final decision of the Department of the Interior.

Attachment 2

Resource Management Plan Protest
Critical Item Checklist

The following items *must* be included to constitute a valid protest whether using this optional format, or a narrative letter.
(43 CFR 1610.5-2)

Before including your address, phone number, e-mail address, or other personal identifying information in your **protest**, be advised that your entire **protest**--including your personal identifying information--may be made publicly available at any time. While you can ask us in your **protest** to withhold from public review your personal identifying information, we cannot guarantee that we will be able to do so. All submissions from organizations and businesses, and from individuals identifying themselves as representatives or officials of organizations and businesses, will be available for public inspection in their entirety.

Resource Management Plan (RMP) or Amendment (RMPA) being protested:

Name:
Address:
Phone Number: ( )

Your interest in filing this protest (how will you be adversely affected by the approval or amendment of this plan?):

Issue or issues being protested:

Statement of the part or parts of the plan being protested:

Chapter:
Section:
Page:
(or) Map:

Attach copies of all documents addressing the issue(s) that were submitted during the planning process by the protesting party, <u>OR an indication of the date the issue(s) were discussed for the record</u>.
Date(s):

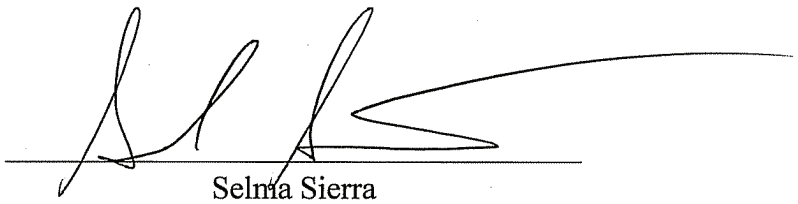
A concise statement explaining why the State Director's decisions is believed to be wrong:

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

THE RICHFIELD FIELD OFFICE PROPOSED RESOURCE MANAGEMENT PLAN AND FINAL ENVIRONMENTAL IMPACT STATEMENT

Bureau of Land Management
Utah State Office
Salt Lake City, Utah

Prepared by the
Richfield Field Office
August 2008



Selma Sierra
Utah State Director

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Richfield Field Office Planning Area
Proposed Resource Management Plan and Final Environmental Impact Statement

Lead Agency: U.S. Department of the Interior, Bureau of Land Management
Type of Action: Final, Administrative
Jurisdiction: Comprising all of Sanpete, Sevier, Wayne, Piute, and portions of Garfield and Kane Counties, Utah.

Abstract: The Richfield Proposed Resource Management Plan and Final Environmental Impact Statement (PRMP/FEIS) describes and analyzes the Proposed RMP and other alternatives presented in the Draft RMP and EIS (DRMP/DEIS) for the planning and management of public lands and resources administered by the Bureau of Land Management (BLM), Richfield Field Office in Utah. The Proposed RMP is open for a 30-day review and protest period beginning, August 8, 2008, the date the U.S. Environmental Protection Agency (EPA) publishes the Notice of Availability (NOA) of the Final EIS in the Federal Register.

The Proposed RMP was crafted primarily from the Preferred Alternative presented in the DRMP/DEIS (Alternative B) and includes other decisions within the range of alternatives (Alternatives N, A, C, and D) in response to public comments and internal review. The No Action Alternative (Alternative N) reflects current management. The BLM has removed the DRMP/DEIS Alternative B (Preferred Alternative) from the PRMP/FEIS. The other DRMP/DEIS Alternatives (Alternatives N, A, C, and D) and analyses are carried forward in the PRMP/FEIS only for comparative purposes and to correct some mistakes that were identified during the public comment period.

Protest: Protests must be postmarked or received no later than 30 days after publication of the NOA by the EPA in the *Federal Register*. The 30-day protest period (identified above) will not be extended. Refer to the instructions in the dear reader letter for additional information on how to protest. The close of the protest period will be announced in news releases, newsletters, and on the Richfield RMP website at http://www.blm.gov/ut/st/en/fo/richfield/planning.html.

For Further Information Contact:
Bureau of Land Management, Richfield Field Office
Attn: John Russell, RMP Project Manager
150 East 900 North
Richfield, Utah 84701
Telephone (435) 896-1500

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CHAPTER 4—ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

This chapter describes environmental consequences that may result from implementing each of the four DRMP/DEIS alternatives and the Proposed RMP described in Chapter 2. The purpose of this chapter is to analyze and disclose potential impacts of the federal action on the human environment. An impact is defined as a modification of the existing environment that is brought about by an outside action. The federal action for this Final Environmental Impact Statement (EIS) is the Bureau of Land Management (BLM) land use plan (LUP) revision for the Richfield Field Office (RFO), including the Proposed RMP that will direct future land management within the RFO.

This chapter is organized by resource topic and contains potential impacts that could or would result from the management actions under DRMP/DEIS Alternatives N, A, C, D, and the Proposed RMP. Topics are presented in the same order as in Chapter 3. Discussions of cumulative impacts, irretrievable and irreversible commitment of resources, unavoidable adverse impacts, and the relationship between local short-term and long-term uses concludes this chapter. The baseline data used for determining the potential impacts are the current resource conditions described in Chapter 3.

4.2 ANALYSIS BACKGROUND

4.2.1 Approach to the Analysis

This impact analysis identifies effects that result from a management action and discusses whether those effects would enhance and improve a given resource or would have the potential to degrade a resource. The analysis describes the actions that have direct and immediate effects, as well as those that result in indirect effects. If an activity or action is not addressed in a given section, no impacts are expected or the impact is expected to be negligible, based on existing knowledge.

The detailed impact analyses and conclusions are based on the BLM's knowledge of resources and the planning area, reviews of existing literature, and information provided by experts in the BLM, cooperating agencies, other agencies, interest groups, and concerned citizens. Impacts on resources and resource uses are analyzed and discussed in detail commensurate with resource issues and concerns identified throughout the process. Geographic information system (GIS) analyses and data from field investigations were used to quantify effects when possible. However, in the absence of quantitative data, qualitative information and best professional judgment were used. Acreage calculations and other numbers used in this analysis are approximate and provided for comparison and analytic purposes; they do not necessarily reflect exact, on-the-ground measurements. At times, impacts are described using ranges of potential impacts or in qualitative terms.

Many management actions presented in Chapter 2 would not result in direct, on-the-ground changes. However, the analysis considers impacts that could eventually result in on-the ground changes, by planning for uses on BLM-administered surface estate and federal mineral estate during the life of the Proposed Resource Management Plan (RMP). Impacts could occur from management of both BLM-managed surface estate and federal mineral estate. BLM-administered federal minerals occur beneath surface estate managed by BLM as well as beneath surface estate within state or private jurisdiction (known as split-estate lands). Some BLM management actions may affect only certain resources and alternatives.

4.2.2 Impact Analysis Terminology

This chapter describes the direct, indirect, and cumulative impact of implementing the DRMP/DEIS No Action Alternative and each of the four action alternatives including the Proposed RMP. Direct impacts are caused by an action and occur at the same time and place as the action. Indirect impacts are caused by the action and occur later or farther away but are still reasonably foreseeable. Cumulative impacts are the effects on the environment that result from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions, regardless of which agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Impacts are also described as to their context, intensity, and duration. Context relates to environmental circumstances at the location and in the immediate vicinity of the impact, affected interests, and locality. Intensity refers to the severity or extent of the impact or the magnitude of change from existing conditions. Duration refers to the permanence or longevity of the impacts and is depicted as short term or long term. Short-term duration is defined as anticipated to begin and end within the first 5 years after the action is implemented. Long-term duration is defined as lasting more than 5 years.

4.2.3 Assumptions for Analysis

Assumptions regarding level of land use activity, resource condition, and resource response are made in the analysis. Potential impacts and their significance are determined based on these assumptions. The following assumptions were used in the analysis and apply to all DRMP/DEIS alternatives and the Proposed RMP, unless otherwise noted:

- Management actions proposed in the DRMP/DEIS alternatives and the Proposed RMP would apply to BLM-administered public lands and resources only. However, cumulative impacts analyses consider potential actions by individuals or entities other than the BLM.
- The DRMP/DEIS alternatives and the Proposed RMP would be implemented as described in Chapter 2 and would be implemented in accordance with applicable laws, regulations, and standard management guidelines.
- BLM policies, including *Fundamentals of Rangeland Health* and *Standards and Guidelines for Grazing Administration*, and Utah's *Standards for Rangeland Health* (SRH) and *Guidelines for Grazing Management* would be applied as appropriate across all DRMP/DEIS alternatives and the Proposed RMP. Rangeland health would be assessed according to the Standards, and the Guidelines would provide strategies to achieve Standards and other desired resource conditions and management objectives.
- Funding would be available to implement the Proposed RMP, as described in Chapter 2.
- Appropriate maintenance would be carried out to maintain the functional capability of all developments (e.g., roads, fences, and other facilities).
- Restrictions or prohibitions on activities in specific areas would protect sensitive resources.
- Mitigation requirements would be applied as described and would prevent or limit direct impacts associated with land use activities or would result in reclamation of the land after the activity has been completed.
- Monitoring would be completed as indicated, and adjustments or revisions would be made as identified.
- The level of activity on BLM-administered land would increase. This expectation is based on historical trends, existing land use agreements such as leases or permits, and statements of interest in land use by individuals and industry organizations.

4.2.4 Availability of Data and Incomplete Information

Council on Environmental Quality (CEQ) regulations for implementing the National Environmental Policy Act (NEPA) require that agencies that evaluate, in an EIS, the reasonably foreseeable significant adverse effects on the human environment identify incomplete or unavailable information, if that information is essential to a reasoned choice among alternatives (43 Code of Federal Regulations [CFR] 1502.22). As is typical in programmatic planning efforts, site-specific data are used to the extent possible but may not be entirely available. The best available information that is pertinent to management actions was used in developing this Proposed RMP. Considerable effort has been taken to acquire and convert resource data into digital format for use in this Proposed RMP. Data was acquired from both BLM and outside sources such as the Utah Division of Wildlife Resources (UDWR). However, certain information was unavailable for use in developing this Proposed RMP. The following types of data were unavailable for all or portions of the planning area:

- Field inventory of soils and water conditions
- Field inventory of wildlife and special status species (SSS) occurrence and condition
- Native American traditional use areas
- Baseline air quality data
- Baseline recreation data
- Surveys for cultural or paleontological resources.

For these resources (and others for which information was unavailable or incomplete), estimates were made regarding the number, type, and significance, based on previous surveys and existing knowledge. Additionally, some impacts cannot be quantified, given the proposed management actions. Where this gap occurs, impacts are projected in qualitative terms. In many situations, subsequent project-level analysis will provide the opportunity to collect and examine the site-specific inventory data required to determine appropriate application of RMP-level guidance. In addition, ongoing inventory efforts by BLM and other agencies within the planning area continue to update and refine information that will be used to implement this Proposed RMP.

4.3 IMPACTS TO PHYSICAL, BIOLOGICAL, AND CULTURAL RESOURCES

4.3.1 Air Resources

This section presents the impacts on air resources from management actions for the resources and resource uses discussed in Chapter 2. Existing conditions concerning air resources are described in Chapter 3.

A qualitative emission comparison approach was selected for the Richfield Proposed RMP analysis of impacts on air quality. This approach was selected because of uncertainties about the number, nature, and specific location of future sources and activities. The emissions calculations were based on the best available engineering data and assumptions; on air, visibility, and emission inventory procedures; and on professional and scientific judgment. However, assumptions were used when specific data or procedures were unavailable. A general statement about National Ambient Air Quality Standards (NAAQS) and Utah Ambient Air Quality Standards can be made for this qualitative analysis. This emission comparison approach is defensible and provides a sound basis for comparing base year air quality emissions with those expected to be produced from the alternatives.

For any future project, BLM will utilize BMPs and site specific mitigation measures, as appropriate and based on site specific conditions, to reduce emissions and comply with local, state, tribal, and federally enforced legal requirements and standards.

Impacts to air quality come primarily from sources outside the planning area, such as regional haze, or from activities on private lands within the planning area (including increased vehicle traffic on highways and roads and industrial development, such as coal-fired power plants) and are thus outside the scope of this Proposed RMP. However, short-term air quality effects could result from fugitive dust and smoke that both directly and indirectly relate to proposed management actions. Main sources of fugitive dust include vehicle and equipment use on unpaved roads, road construction and maintenance activities, and mineral operations. Main sources of smoke are wildland fire use and prescribed fires. Wildfire smoke is outside the scope of this document but will likely remain the largest source of emissions in the next 15 years.

Global Climate Change

The assessment of climate changing pollutant emissions and climate change is in its formative phase; therefore, it is not yet possible to know with confidence the net impact to climate. However, the Intergovernmental Panel on Climate Change (IPCC 2007) recently concluded that "warming of the climate system is unequivocal" and "most of the observed increase in globally average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic [man-made] greenhouse gas concentrations."

The lack of scientific tools designed to predict climate change on regional or local scales limits the ability to quantify potential future impacts. Currently BLM does not have an established mechanism to accurately predict the effect of resource management-level decisions from this planning effort on global climate change. However, potential impacts to air quality due to climate change are likely to be varied. For example, if global climate change results in a warmer and drier climate, increased particulate matter impacts could occur due to increased wind blown dust from drier and less stable soils. Cool season plant species' spatial ranges are predicted to move north and to higher elevations, and extinction of endemic threatened/endangered plants may be accelerated. Due to loss of habitat, or due to competition from other

species whose ranges may shift northward, the population of some animal species may be reduced. Less snow at lower elevations would be likely to impact the timing and quantity of snowmelt, which, in turn, could impact aquatic species. In the future, as tools for predicting climate changes in a management area improve and/or changes in climate affect resources and necessitate changes in how resources are managed, BLM may be able to re-evaluate decisions made as part of this planning process and adjust management accordingly.

Methods and Assumptions

The emissions inventory was developed for the RFO by using the best available information provided by the RFO about activities on BLM land. The calculations used emissions factors that are accepted and recognized by state and federal regulatory agencies. This analysis selected two time frames to evaluate future emissions. The time frames reflect the current base-year conditions and the long-term impacts. It is assumed that emission growth will always be constant and linear in time. The two inventory time frames are:

- Current emissions (using the year 2007 as a basis)
- 15-year potential emissions for the long term (2022).

The analysis is based on the following assumptions:

- The emission factors recommended by the U.S. Environmental Protection Agency (EPA) (EPA 1995b) would be appropriate for all activities.
- Activity factors would be appropriate for the base year and in future time frames.
- Any anticipated growth in recreation would follow growth trends for Utah during the past 10 years.
- For the qualitative analysis, only emissions from BLM-administered activities would be included.
- Coal production would be stabilized at 13.9 million tons per year. Because underground coal mining does not have specific emissions factors, appropriate factors from surface mining facilities would be used.
- Hydrocarbon emissions, also known as Volatile Organic Compounds (VOC), would include hazardous air pollutants (HAP).

The qualitative analysis used reasonable-but-conservative assumptions for air quality. When there were ranges of activity factors, the upper limit of the range was used to complete calculations for future time frames. BLM would consider performing quantitative dispersion modeling analyses for a project-specific EIS associated with a proposed project.

Visibility is potentially affected by many factors (including emissions), so the qualitative emissions analysis cannot be used to assess potential visibility impacts on nearby Class I areas from activities within the decision area. However, implementation and compliance with the State Implementation Plan, specifically with Section XVII Visibility Protection, is expected to meet visibility goals under all management alternatives. In addition, site-specific EISs and environmental assessments (EA) will include a quantitative visibility analysis, if warranted by the project.

Emissions were calculated for the following activities: conventional oil and coal mining, lands and realty actions, livestock grazing, off-highway vehicle (OHV) use, resource roads use, salable mineral development, and vegetation management. Activities related to cultural resources, paleontology, recreation, transportation and access, OHV use, noxious weed control, wild horses, and fish and wildlife are assumed to be minor sources of air emissions.

Impacts Common to the Proposed RMP and Draft Alternatives

Because this air quality analysis is qualitative, specific impacts of resource activities on air quality cannot be determined. However, it is BLM's judgment that several resource programs (cultural resources, paleontology, forestry and woodlands, wild horses and burros, and fish and wildlife) have only minor or negligible impacts on air quality and will not be discussed further in this analysis. Impacts on air quality would not be anticipated from implementing actions for soil, water, and riparian; visual resources management (VRM); SSS; special designations (Wilderness Study Areas [WSA], Areas of Critical Environmental Concern [ACEC], Wild and Scenic Rivers [WSR]); other special designations; and hazardous materials and waste.

Trucks and heavy equipment (e.g., fire engines, bulldozers) used in vegetation management and manipulation would produce dust when traveling over unpaved roads. Areas receiving vegetation treatment would also add to particulate matter (PM) emissions in the short term until the vegetation recovers sufficiently to stabilize exposed soil.

Wildland and prescribed fires would cause short-term emissions of particulate matter and carbon monoxide (CO) that could spread over large portions of the RFO area, depending on the size of the fire and the wind conditions. In addition, the use of heavy equipment during fire suppression activities would result in particulate emissions (i.e., CO, nitrogen oxides [NO_x], and VOCs).

Livestock grazing and support of grazing activities, which include trucking of livestock into and out of the RFO and checking or constructing livestock range improvements and fences, generate vehicular exhaust emissions and dust. These emissions are produced by both construction activities and regular travel on unpaved and paved roads.

The major recreation impact on air quality would be from OHV use. Use of equipment such as all-terrain vehicles and motorcycles would cause fugitive emissions of PM from traffic on unpaved trails, as well as causing vehicular emissions of PM, CO, NO_x, and VOCs. This impact is expected to peak during weekends and holidays.

The various construction activities authorized under lands and realty for rights-of-way (ROW) (e.g., wind power, communication sites, transmission lines, and pipeline projects) produce PM emissions. The main causes of short-term emissions are soil disturbing activities (e.g., grading, bulldozing, trench digging, traveling on unpaved roads). Exhaust emissions from vehicular travel and emissions from equipment use would also occur.

Air emissions would be produced during all phases of oil development, including exploration, well development, production, and well abandonment and reclamation. During exploration and development, traffic on unpaved and paved roads would cause emissions of PM, CO, NO_x, sulfur dioxide [SO_2], and VOCs. In addition, during well development, drilling activities and construction activities would cause particulate emissions and gaseous emissions as a result of heavy equipment use.

Air emissions would be produced during mining operations and reclamation activities. During mining activities, PM emissions would be produced from overburden removal, blasting, truck loading, bulldozing, grading, storage piles, railroad loading, and travel of heavy equipment over unpaved roads. Gaseous emissions from vehicular exhaust (CO, NO_x, SO_2, and VOCs) would occur from heavy equipment, trains, and vehicular travel.

Base Year

Emissions were calculated for all existing activities and oil well development for the base year (2007) to compare the potential increase in emissions from these activities over a 15-year time horizon (2022). Table 4-1 displays a summary of total emissions that BLM estimates for the base year (2007), broken down by activity. Emissions are calculated on an annual basis (tons per year). The total estimated emissions calculated for 2007 are 1,243 tons per year.

Table 4-1. Base Year Emission Summary

Activity	PM_{10} Tons	$PM_{2.5}$ Tons	NO_x Tons	SO_2 Tons	CO Tons	VOC Tons	HAPs[b] Tons
Oil Well Development and Exploration							
Oil Well Construction	21	5	61	3	36	4	0
Oil Well Operations	0	0	3	0	1	0	0
Oil Well Maintenance	0	0	0	0	0	0	0
Subtotal: Oil Well	**21**	**5**	**64**	**3**	**37**	**4**	**0**
Non-Oil Well Activities							
Coal Mining[a]	111	111	142	16	251	13	1
Lands and Realty	18	3	1	0	0	0	0
Livestock Grazing	5	1	3	0	7	0	0
OHVs[a]	5	5	2	0	353	153	15
Resource Roads	0	0	0	0	0	0	0
Salable Minerals	26	5	0	0	0	0	0
Vegetation	5	1	0	0	0	0	0
Subtotal: Non-Oil Well Activities	**171**	**125**	**148**	**16**	**611**	**166**	**16**
Grand Total	**192**	**131**	**213**	**19**	**648**	**171**	**16**

[a] $PM_{2.5}$ assumed = PM_{10} for this activity
[b] HAPs assumed = VOCs * 0.1
Note: The values in this table may not sum exactly due to rounding.

Alternative N: No Action

Emissions Calculations

Table 4-2 summarizes total and specific pollutant emissions for Alternative N. These emissions have been estimated for the base-year time frame (2007) and for the 15-year time horizon (2022). Under this alternative, total emissions would increase from the base-year level of 1,243 tons of pollutants per year to 2,250 tons per year by 2022.

Given the low ambient concentrations for some pollutants that exist in the RFO, it is expected that the increase in emissions of CO, NO_x, SO_2, PM_{10}, and $PM_{2.5}$ for Alternative N would not cause concentrations to exceed NAAQS or state ambient air quality standards.

Table 4-2. Alternative N Emissions Summary

Activity	PM_{10} Tons	$PM_{2.5}$ Tons	NO_x Tons	SO_2 Tons	CO Tons	VOC Tons	HAPs[b] Tons
Oil Well Development and Exploration							
Oil Well Construction	44	13	247	6	60	12	1
Oil Well Operations	8	2	44	1	10	1	0
Oil Well Maintenance	0	0	0	0	0	0	0
Subtotal: Oil Well	**52**	**15**	**292**	**7**	**70**	**13**	**1**
Non-Oil Well Activities							
Coal Mining[a]	111	111	142	16	252	13	1
Lands and Realty	18	2	1	0	0	0	0
Livestock Grazing	5	1	3	0	7	0	0
OHVs[a]	11	11	5	-	877	322	32
Resource Roads	0	0	0	0	0	0	0
Salable Minerals	26	5	-	-	-	-	-
Vegetation	5	1	0	0	0	0	0
Sub-total: Non-Oil Well Activities	**177**	**131**	**151**	**16**	**1,136**	**335**	**33**
Grand Total: Alternative N Development	**229**	**146**	**443**	**23**	**1,206**	**348**	**35**

[a] $PM_{2.5}$ assumed = PM_{10} for this activity
[b] HAPs = assumed = VOCs * 0.1
Note: The values in this table may not sum exactly due to rounding.

Impacts from Air Quality, Soil Resources, and Water Resources

Application of best management practices (BMP) (as listed in Appendix 14) and specific mitigation measures identified in activity-level planning and NEPA-level review would prevent or reduce impacts to air quality. Mitigation during surface-disturbing projects would reduce or eliminate the potential for fugitive dust.

Impacts from Vegetation and Fire and Fuels Management

Wildland fires are a source of air pollutant emissions during combustion of vegetation. The amount of emissions depends on the size and intensity of the fire, the fuel type and moisture content, and the available fuel load. The level of resulting air quality impact depends on the amount and duration of emissions, atmospheric dispersions conditions, and terrain. Under the Proposed RMP and DRMP/DEIS Alternatives, BLM intends to comply with the *Utah Smoke Management Plan* (Utah Department of Air Quality [UDAQ] 2003); implementing actions and mitigations designed to minimize impacts from both wildland fire and prescribed fire.

Alternative N, under the *2005 Land Use Plan Amendment for Fire and Fuels Management*, allows for the full range of fire- and fuels-management actions to achieve ecosystem sustainability. This alternative allows a wide range of vegetation treatment (including mechanical, wildland or prescribed fire, and chemical methods). Some of the treatment methods proposed (e.g., mechanical, chemical) would result in localized and short-term impacts to air quality, including fugitive dust, emission/exhaust from equipment, and chemical fumes. The use of naturally ignited wildland fire and prescribed fire would result in smoke

emissions in the immediate area. In general, these impacts would be minor, although moderate-intensity impacts could be experienced in the immediate vicinity of the treatment areas. The effects on air quality from wildland fires would potentially be of longer duration than those from planned ignitions, depending on the vegetation types involved. Wildland fires would result in greater, direct impacts resulting from smoke and fire abatement efforts. Indirect impacts from wildfires could stem from reduced or eliminated vegetation cover, which would expose the underlying soil to wind and water erosion. Until the area revegetated, that erosion would increase levels of fugitive dust (in the short term) during wind events.

Alternative N's wildland fire use, prescribed fire, and non-fire fuel treatments would minimize smoke and other emissions in the short term but could result in increased fuel build-up, more frequent and larger wildland fires, and greater emissions in the long term, until enough treatment has occurred to bring ecosystems within properly functioning parameters.

Impacts from Travel Management

OHV use impacts air quality by increasing fugitive dust levels, particularly in heavily used areas during times of drought, when soil is drier and the potential to generate dust is greater. Because OHV use contributes to air impairments from fugitive dust and vehicular exhaust emissions, closing areas to cross-country, OHV use—except for authorized administrative and emergency purposes—and limiting travel to designated routes would limit impacts to air quality. OHV emissions would be minimal or nonexistent on 214,000 acres (10%) of the RFO that are closed to motorized vehicle use, although some emissions could be transported from adjacent routes along the boundaries of such areas.

The public would have access to 4,315 miles of unpaved routes in the RFO under Alternative N. Use of these routes would continue to create localized air pollution.

Because of their often rough condition, unimproved routes help keep vehicle speeds down, further reducing the levels of dust. Route-maintenance activities, although minimal and designed solely to correct those conditions that are unsafe or hazardous, would also result in fugitive dust. Watering and the use of chemical dust suppressants would greatly reduce the amount of dust emissions. Closing 65 miles of routes would result in reduced amounts of OHV emissions within the immediate vicinity of the closed routes. Overall impacts to air quality from travel on unpaved routes and maintenance or improvement activities would be localized and short term and could be rated from negligible to minor.

Under Alternative N, motor vehicles would be limited to existing, designated, and maintained routes on 277,600 acres (13%) of the RFO. Because the vast majority of routes are unpaved, use of these routes would result in fugitive dust. In addition, 1,636,400 acres (77%) of public lands would be open to motorized cross-country vehicle use under Alternative N. Vehicle use, specifically OHV use, in open areas compared to designated and existing routes has the potential to cause the greatest amount of direct impacts to air quality. These impacts on the overall air quality of the planning area would be negligible to minor, depending upon the level of use, speed of vehicle, and climatic conditions (e.g., amount of wind, humidity, soil moisture). Route-maintenance activities, which would be limited to existing route types, maintenance levels, and frequencies, would also result in emissions. Watering and the use of chemical dust suppressants would greatly reduce the amount of dust emissions from maintenance and on haul roads from gravel pits, mines, and oil drilling sites.

Impacts from Minerals and Energy

Air quality could be impacted during all phases of oil and gas development, including exploration, well development, production, and well abandonment. Equipment used for exploration and development emits PM, CO, NO_x, SO_2, and VOCs, including HAPs. Heavy equipment used in well development, drilling, and construction activities could cause increases in PM and tailpipe emissions. Additionally, vehicle traffic on unpaved roads could cause increases in fugitive dust. Oil and gas production could cause

emissions of PM, CO, NO_x, SO_2, and VOCs, including HAPs. Glycol operations and flashing activities could produce PM, SO_2, NO_x, and VOCs. Additionally, flaring of gases would impact air quality from produced methane, hydrogen sulfide, soot or PM, CO, and NO_x.

Adherence to BMPs outlined in mining laws, plans of operation, pertinent restrictions, and standard terms and conditions would help minimize such impacts (Appendices 10 and 14). Closing 459,700 acres to fluids mineral leasing, withdrawing 169,480 acres to mineral entry, and closing 459,700 acres to mineral material disposal would virtually eliminate emissions from mineral management within those areas. Overall impacts to air quality would be minor.

Alternative A

Emissions Calculations

Table 4-3 summarizes total and specific pollutant emissions for Alternative A. The total emissions for this alternative would increase from the base-year level of 1,243 tons per year of pollutants to 2,271 tons per year by 2022. Although the differences are small, Alternative A has the largest increase along with the Proposed RMP. Emissions would also increase relative to the No Action Alternative.

Given the low ambient concentrations that exist in the RFO for some pollutants, it is expected that the increase in emissions of CO, NO_x, SO_2, PM_{10}, and $PM_{2.5}$ for Alternative A would not cause concentrations to exceed NAAQS or state ambient air quality standards.

Table 4-3. Alternative A Emissions Summary

Activity	PM_{10} Tons	$PM_{2.5}$ Tons	NO_x Tons	SO_2 Tons	CO Tons	VOC Tons	HAPs[b] Tons
Oil Well Development and Exploration							
Oil Well Construction	44	13	247	6	60	12	1
Oil Well Operations	8	2	44	1	10	1	0
Oil Well Maintenance	0	0	0	0	0	0	0
Subtotal: Oil Wells	**52**	**15**	**291**	**7**	**70**	**13**	**1**
Non-Oil Well Activities							
Coal Mining[a]	111	111	142	16	252	13	1
Lands and Realty	18	3	1	0	0	0	0
Livestock Grazing	5	1	3	0	7	0	0
OHVs[a]	11	11	5	-	877	322	32
Resource Roads	0	0	0	0	0	0	0
Salable Minerals	26	5	-	-	-	-	-
Vegetation	26	4	0	0	0	0	0
Sub-total: Non-Oil Well Activities	**198**	**135**	**152**	**16**	**1,136**	**335**	**33**
Grand Total: Alternative A Development	**250**	**150**	**443**	**23**	**1,206**	**348**	**35**

[a] $PM_{2.5}$ assumed = PM_{10} for this activity.
[b] Assumed = VOCs * 0.1
Note: The values in this table may not sum exactly due to rounding.

Impacts from Air Quality, Soil Resources, and Water Resources

Impacts would be the same as those described under Alternative N.

Impacts from Vegetation and Fire and Fuels Management

The types of impacts experienced as a result of vegetation and fire and fuels management would be similar to those described under Alternative N; although under Alternative A, maximum acreage limits would be set (averaging 73,600 annually for all treatments). Although no maximum treatment acreage limits exist under Alternative N, it is likely that more acres would actually be treated under that alternative in some years (active fire years) because Alternative N generally employs full use of wildland fire and allows for treatment of vegetation to reduce hazardous fuel and to restore ecosystem function. Impacts to air quality under Alternative A would likely result in reduced smoke and other emissions in the short term (compared to Alternative N) but would also likely result in increased fuel build-up, more frequent and larger wildland fires, and increased emissions in the long term.

Impacts from Travel Management

The types of impacts experienced as a result of travel-management decisions under Alternative A would be similar to those described under Alternative N. OHV use, which contributes to air impairments from fugitive dust and exhaust emissions, would continue on public lands within the RFO. Under Alternative A, motorized vehicles would be limited to designated routes on 1,679,000 acres (79%) of the RFO; 449,000 acres (21%) of public lands would be open to cross-country motorized vehicle use; and no areas would be closed to motorized use. The amount of open areas, although greatly reduced compared to Alternative N, would still result in the potential for air quality impacts (e.g., fugitive dust, emissions) from vehicle use in and near such areas. The remainder of the RFO would limit motorized use to designated routes (no areas would be closed). The public would have access to 4,312 miles of unpaved routes (slightly more than Alternative N), which could result in increased impacts to air quality. The BLM would close 68 miles of routes (slightly more than those closed in Alternative N). Impacts from route maintenance or improvement activities would be the same as those described under Alternative N. Overall impacts to air quality would be negligible to minor, depending upon the level of use, speed of vehicle, and climatic conditions (e.g., amount of wind, humidity, soil moisture).

Impacts from Minerals and Energy

Under Alternative A, similar amounts of BLM lands would be closed to fluid mineral leasing (446,900 acres), withdrawn from mineral location (154,700 acres), and closed to mineral material disposal (446, 900 acres) as proposed under Alternative N. Thus, impacts would be similar to those under Alternative A.

Proposed RMP

Emissions Calculations

Table 4-4 summarizes total and specific pollutant emissions for the Proposed RMP. The total emissions for this alternative would increase from the base-year level of 1,243 tons of pollutants per year to 2,271 tons per year by 2022, equivalent to Alternative A. Total emissions would also increase, relative to the No Action Alternative.

Given the low ambient concentrations that exist in the RFO for some pollutants, it is expected that the increase in emissions of CO, NO_x, SO_2, PM_{10}, and $PM_{2.5}$ for the Proposed RMP would not cause concentrations to exceed NAAQS or state ambient air quality standards.

Table 4-4. Proposed RMP Emissions Summary

Activity	PM_{10} Tons	$PM_{2.5}$ Tons	NO_x Tons	SO_2 Tons	CO Tons	VOC Tons	HAPs[b] Tons
Oil Well Development and Exploration							
Oil Well Construction	44	13	247	6	60	12	1
Oil Well Operations	8	2	44	1	10	1	0
Oil Well Maintenance	0	0	0	0	0	0	0
Subtotal: Oil Wells	**52**	**15**	**292**	**7**	**70**	**13**	**1**
Non-Oil Well Activities							
Coal Mining[a]	111	111	142	16	252	13	1
Lands and Realty	18	3	1	0	0	0	0
Livestock Grazing	5	1	3	0	7	0	0
OHVs[a]	11	11	5	-	877	322	32
Resource Roads	0	0	0	0	0	0	0
Salable Minerals	26	5	-	-	-	-	-
Vegetation	26	4	0	0	0	0	0
Subtotal: Non-Oil Well Activities	**198**	**135**	**151**	**16**	**1,136**	**335**	**33**
Grand Total: Proposed RMP Development	**250**	**150**	**443**	**23**	**1,206**	**348**	**35**

[a] $PM_{2.5}$ assumed = PM_{10} for this activity
[b] Assumed = VOCs * 0.1
Note: The values in this table may not sum exactly due to rounding.

Impacts from Air Quality, Soil Resources, and Water Resources

Impacts would the same as those described under Alternative N.

Impacts from Vegetation and Fire and Fuels Management

Impacts would the same as those described under Alternative A.

Impacts from Travel Management

The types of impacts experienced as a result of travel management decisions under the Proposed RMP would be similar to those described under Alternative N. OHV use, which contributes to air impairments from fugitive dust and exhaust emissions, would continue on public lands within the RFO. Under the Proposed RMP, motorized vehicles would be limited to designated routes on 1,908,210 acres (90%) of the RFO; 9,890 acres (less than 1%) would be open to motorized vehicle use; and 209,900 acres (10%) would be closed to motorized use. Although motorized vehicle use would be limited to designated routes on a similar number of acres as Alternative A, substantially fewer areas would be open to motorized vehicle use under the Proposed RMP; thereby eliminating impacts from vehicle use in open areas. In addition, 10% of the RFO would be closed to motorized use under the Proposed RMP, which would decrease the potential for emissions in those areas.

The public would have access to 4,277 miles of unpaved routes in the RFO. Use of these roads would continue to create localized air pollution. Substantially more miles of routes (280 miles) would be closed under the Proposed RMP than under Alternative N or A, further reducing the level of emissions near these

closed routes. Overall impacts to air quality would be negligible to minor, depending upon the level of use, speed of vehicle, and climatic conditions (e.g., amount of wind, humidity, soil moisture).

Impacts from Minerals and Energy

Under the Proposed RMP, similar amounts of BLM lands would be closed to fluid mineral leasing (447,300 acres), withdrawn from mineral location (176,200 acres), and closed to mineral material disposal (601,800 acres) as proposed under Alternative N, thus resulting in similar impacts.

Alternative C

Emissions Calculations

Table 4-5 summarizes total and specific pollutant emissions for Alternative C. The total emissions for this alternative would increase from the base-year level of 1,243 tons of pollutants per year to 2,254 tons per year by 2022. Although the differences are small, Alternative C includes the third smallest increase found in any of the alternatives. Emissions would also increase slightly relative to the No Action Alternative.

Given the low ambient concentrations that exist in the RFO for some of the pollutants, it is expected that the increase in CO, NO_x, SO_2, PM_{10}, and $PM_{2.5}$ emissions from Alternative C would not cause concentrations to exceed NAAQS or state ambient air quality standards.

Table 4-5. Alternative C Emissions Summary

Activity	PM_{10} Tons	$PM_{2.5}$ Tons	NO_x Tons	SO_2 Tons	CO Tons	VOC Tons	HAPs[b] Tons
Oil Well Development and Exploration							
Oil Well Construction	44	13	247	6	60	12	1
Oil Well Operations	8	2	44	1	10	1	0
Oil Well Maintenance	0	0	0	0	0	0	0
Subtotal: Oil Well	**52**	**15**	**292**	**7**	**70**	**13**	**1**
Non-Oil Well Activities							
Coal Mining[a]	111	111	142	16	252	13	1
Lands and Realty	18	3	1	0	0	0	0
Livestock Grazing	5	1	3	0	7	0	0
OHVs[a]	11	11	5	-	877	322	32
Resource Roads	0	0	0	0	0	0	0
Salable Minerals	26	5	-	-	-	-	-
Vegetation	10	2	0	0	0	0	0
Subtotal: Non-Oil Well Activities	**181**	**133**	**151**	**16**	**1,136**	**335**	**33**
Grand Total: Alternative C Development	**233**	**148**	**443**	**23**	**1,206**	**348**	**34**

[a] $PM_{2.5}$ assumed = PM_{10} for this activity
[b] Assumed = VOCs * 0.1
Note: The values in this table may not sum exactly due to rounding.

Impacts from Air Quality, Soil Resources, and Water Resources

Impacts would the same as those described under Alternative N.

Impacts from Vegetation and Fire and Fuels Management

The types of impacts experienced as a result of vegetation and fire and fuels management would be similar to those described under Alternative A and the Proposed RMP, although under Alternative C fewer acres would be treated annually (as much as 26,000 annually for all treatments). Thus, impacts to air quality under Alternative C would result in decreased smoke and other emissions in the short term but could result in increased fuel build-up, more frequent and larger wildfires, and increased emissions in the long term, compared to Alternative A and the Proposed RMP.

Impacts from Travel Management

The types of impacts experienced as a result of travel management decisions under Alternative C would be similar to those described under Alternative N. OHV use, which contributes to air impairments from fugitive dust and exhaust emissions, would continue on public lands within the RFO. Under Alternative C, motorized vehicles would be limited to designated routes on 1,445,000 acres (68%) of the RFO; 683,000 acres (32%) would be closed to motorized use; and no areas would be open to motorized vehicle use. With a greater area closed to motor vehicle use and with no area open, overall emissions within the RFO would likely be reduced.

The public would have access to 3,192 miles of unpaved routes in the RFO. Use of these roads would continue to create localized air pollution. More miles of routes (1,188 miles) would be closed compared to Alternatives N, A, or the Proposed RMP, further reducing the level of emissions near these closed routes. Overall impacts to air quality would be negligible to minor, depending upon the level of use, speed of vehicle, and climatic conditions (e.g., amount of wind, humidity, soil moisture).

Impacts from Minerals and Energy

Under Alternative C, more BLM lands would be closed to fluid mineral leasing and to mineral material disposal (586,300 acres) and substantially more areas would be withdrawn from mineral location (331,100 acres)than under Alternative N or A, or the Proposed RMP. The impacts to air quality described for Alternative N would therefore occur over a smaller area. Overall impacts to air quality would be minor.

Alternative D

Emissions Calculations

Table 4-6 summarizes total and specific pollutant emissions for Alternative D. The total emissions for this alternative would increase from the base-year level of 1,243 tons of pollutants per year, to 2,240 tons per year by 2022, the lowest increase found among the alternatives. Emissions would also decrease relative to the No Action Alternative.

Given the low ambient concentrations that exist in the RFO for some pollutants, it is expected that the increase in emissions of CO, NO_x, SO_2, PM_{10}, and $PM_{2.5}$ for the Proposed RMP would not cause concentrations to exceed NAAQS or state ambient air quality standards.

Table 4-6. Alternative D Emissions Summary

Activity	PM_{10} Tons	$PM_{2.5}$ Tons	NO_x Tons	SO_2 Tons	CO Tons	VOC Tons	HAPs[b] Tons
Oil Well Development and Exploration							
Oil Well Construction	43	12	238	6	58	11	1
Oil Well Operations	8	2	44	1	10	1	0
Oil Well Maintenance	0	0	0	0	0	0	0
Subtotal: Oil Well	**51**	**14**	**282**	**7**	**68**	**12**	**1**
Non-Oil Well Activities							
Coal Mining[a]	111	111	142	16	252	13	1
Lands and Realty	18	3	1	0	0	0	0
Livestock Grazing	5	1	3	0	7	0	0
OHVs[a]	11	11	5	-	877	322	32
Resource Roads	0	0	0	0	0	0	0
Salable Minerals	26	5	-	-	-	-	-
Vegetation	10	2	0	0	0	0	0
Subtotal: Non-Oil Well Activities	**181**	**133**	**151**	**16**	**1,136**	**335**	**33**
Grand Total: Alternative D Development	**232**	**147**	**433**	**23**	**1,204**	**348**	**35**

[a] $PM_{2.5}$ assumed = PM_{10} for this activity
[b] Assumed = VOCs * 0.1
Note: The values in this table may not sum exactly due to rounding.

Impacts from Air Quality, Soil Resources, and Water Resources

Impacts would the same as those described under Alternative N.

Impacts from Vegetation and Fire and Fuels Management

Impacts would the same as those described under Alternative C.

Impacts from Travel Management

The types of impacts experienced as a result of travel management decisions under Alternative D would be similar to those described under Alternative N. OHV use, which contributes to air impairments from fugitive dust and exhaust emissions, would continue on public lands within the RFO. Under Alternative D, motorized vehicles would be limited to designated routes on 972,800 acres (46%) of the RFO; 1,155,200 acres (54%) would be closed to motorized use; and no areas would be open to motorized vehicle use. With a greater area closed to motor vehicle use and with no area open, overall emissions within the RFO would be reduced.

The public would have access to 3,043 miles of unpaved routes in the RFO. Use of these roads would continue to create localized air pollution. More miles of routes (1,242 miles) would be closed under Alternative D than under any of the other alternatives, further reducing the level of emissions near these closed routes. Overall impacts to air quality would be negligible to minor, depending upon the level of use, speed of vehicle, and climatic conditions (e.g., amount of wind, humidity, soil moisture).

Impacts from Minerals and Energy

Under Alternative D, substantially more BLM lands would be closed to fluid mineral leasing, closed to mineral material disposal (1,160,500 acres), and withdrawn from mineral location (903,900 acres), compared to any of the other alternatives. The impacts to air quality described for Alternative N would therefore occur over a much smaller area; overall impacts to air quality would be negligible.

Mitigation Options

BLM would consider mitigation for potential direct project impacts in an EIS for a proposed project. By identifying potential mitigation measures BLM is not prescribing a particular mitigation measure. In addition to specific mitigation measures for projects, the BLM may consider taking an outcome-based approach.

Mitigation may be applied to fugitive dust and NO_x impacts. Fugitive dust refers to any particulate matter that is not deliberately emitted by a well-defined source. Fugitive dust sources typically include windblown dust from unvegetated lands, construction, and unpaved roads. Table 4-7 shows several fugitive dust mitigation options available.

Table 4-7. Effectiveness and Costs of Fugitive Dusk Mitigation Measures (PM_{10})

	Dust Sources					
	Disturbed Areas	Unpaved Roads[1]				
Effectiveness	Level proportional to percentage of land cover	0–50% reduction in uncontrolled dust emissions	33–100% control efficiency	80% for 15 mph[3] 65% for 20 mph[3] 25% for 30 mph[3]	30% reduction	90% reduction
Estimated Cost	Unknown	$4,000/mile	$2,000 to $4,000/mile per year	Unknown	$9,000/mile	$11,000 to $60,000/mile

NO_x emissions are associated with combustion. Table 4-8 shows several potential mitigation measures that could reduce impacts from NO_x emissions. The appropriate level of control will be determined by the State of Utah during the construction permit process.

Table 4-8. Efficiency of Nitrogen Oxides (NO_x) Mitigation Measures

	NO_x Emissions Sources			
	Field Compressors	Sales Compressors	Temporary Diesel Generators[1]	Heavy Equipment
Mitigation Options/Efficiency	Implement BACT Typically results in a NO_x emission rate of about 1 g/bhp-hr	Implement BACT Typically results in a NO_x emission rate of about 1 g/bhp-hr	Register with state; WDEQ regulate as appropriate	Voluntary use of diesel engines

Wyoming is currently registering these generators to determine whether NO_x emissions are significant.

In addition, Table 4-9 shows additional mitigation measures to be considered in the planning area impact assessment. These are general mitigation opportunities that should be considered and applied as appropriate. BLM has no authority to require any application of these measures, although industry is encouraged to implement these measures on its own before they are required by the State of Utah. Advances in technology are likely to offer new mitigation options during the time covered by the RMP. Under NEPA, the planners of individual projects in the planning area must recommend mitigations measures that are appropriate for the projects. The State of Utah, as the permitting authority, will review permit applications and require specific emission control devices and measures. All costs shown in this table are approximate.

Table 4-9. Additional Mitigation Measures with Approximate Costs and Benefits

Type of Mitigation	Approximate Cost	Environmental Cost	Potential Limitations	Environmental Benefit
Selective Catalytic Reduction for Compressor Emissions	$4,000 to $27,000 per NO_x ton-year.	Possible NH_3 releases.	May be cost prohibitive for oil and gas applications.	NO_x emission rate reduced to 0.1 g/hp-hr; decreased visibility impact.
"Green Completions" and Flowback Units	Capital cost ranges from $1,000 to $10,000. Operating cost is $1,000/year. Payback 1–3 years.	Moving equipment to and from well completions. Fugitive dust from trucks.		Saves 100,000 cubic feet of gas per well per year. Reduces flaring emissions by 70–90% at completion.
Electrical Compressors	Capital cost is 40% of gas turbine cost. Operating costs depend on location of transmission lines.	Displaced air emissions from compressor unit to electric power plant.		Moving air emissions away from sensitive PSD Class I areas.
Fugitive Dust Road Treatment	$2,400–$50,000 per mile.	Possible vegetation effects.		20–100% dust control.
Fugitive Dust Administrative Control	$13,000 per well for remote telemetry. A few added work hours per year traveling at enforced speed limits.	Minor/unknown.	Difficult to enforce.	Reduced VMTs with related emission reductions. Slower speeds give 20–50% reductions in dust emissions.
Larger Diameter Sales Pipeline	Capital costs increase with larger pipes. Operating costs decrease with larger pipes.	Larger trench for burying line. Slightly more surface disturbance.	Probably applicable only for large producing operations.	Possibly resulting in lower compressor emissions.
Microhole Drilling	Cost of technology transfer; then potentially less than conventional drilling.	Additional impacts if duplicate drilling is necessary.		Lighter equipment on roads, smaller drilling sites, reduced gaseous emissions during drilling.
Condensate Pipelines	Cost of pipe and installation minus cost of eliminated storage tank and trucking.	Trench for burying line.	The cost may outweigh benefit.	Eliminate emissions from storage vessels; eliminate miles traveled by vacuum trucks.

Type of Mitigation	Approximate Cost	Environmental Cost	Potential Limitations	Environmental Benefit
Wind Farm Electric Generation	4 to 5 cents/kW-hr. Capital costs are large.	Visual impacts, impacts on raptors, maintenance.	Large capital costs required	Reduced power plant emissions. (VOC, NO_x, SO_2, CO, CO_2)
Phased oil and gas Development	Short-term loss of state and federal royalties	Emissions averaged over a longer period.		Peak emissions and impacts are reduced.

The relationship between VOC and nitrogen oxides to form ozone is complex. At this time it is unclear how ozone concentrations would change with VOC and NO_x mitigation. However, Table 4-10 outlines potential VOC mitigation measures.

Table 4-10. VOC Mitigation Measures

Type of Mitigation	Approximate Cost	Environmental Cost	Environmental Benefit
Condenser on Glycol Dehydrator	$1,000 to $10,000	Unknown	95% VOC and HAP reduction.
Activated Carbon Filter on Condensate Storage Tank	$1,000 and up	Energy required to recycle filter.	50–80% VOC reduction.
Stage I Vapor Controls for Condensate Transfer for Truck Loading	$1,000–$3,000	Potential fire risk with improper operation.	90% VOC emission reduction during transfer.

Summary

A qualitative emission comparison approach was selected for the air quality impact analysis. This analysis shows that under all alternatives, there will be little to no impacts. The emissions calculations were based on the best available engineering data and assumptions; on air, visibility, and atmospheric deposition data; on emission inventory procedures; and on professional and scientific judgment. However, where specific data or procedures were not available, assumptions were made. There are limitations associated with this approach. However, given uncertainties about the number, nature, and specific location of future sources and activities, the emission comparison approach is defensible and provides a sound basis for comparing alternatives.

Table 4-11 and Table 4-12 summarize total and specific pollutant emissions for all the alternatives. The range of total emissions is minor (Table 4-11) and the difference between the alternatives is not significant. Please note that the total numbers in Table 4-11 are derived from adding the $PM_{10,}$ $NO_{x,}$ $SO_{2,}$ CO, and VOCs. $PM_{2.5}$ and HAPs are not added in because they are subsets of the PM_{10} and VOC numbers, respectfully. Also note that the totals in Table 4-12 maybe slightly different than the sum of the values in Table 4-2 through Table 4-6 because of rounding.

Except for NO_x, oil development is not a major contributor to air emissions. Non-oil well activities that contribute to emissions include drilling and coal mining, which is the largest contributor to $NO_{x;}$ OHV activities are the largest contributor to CO, VOC, and HAP emissions; and coal mining is the largest

emissions source for PM. It is expected that the increase in CO, NO_x, SO_2, PM_{10}, and $PM_{2.5}$ emissions (Table 4-8) from any alternative would not cause concentrations to exceed NAAQS or state ambient air quality standards.

Table 4-11. Total Emissions for Alternatives (Tons Per Year)

Alternative	2007	2022
No Action Alternative	1,243	2,250
Alternative A	1,243	2,271
Proposed RMP	1,243	2,271
Alternative C	1,243	2,254
Alternative D	1,243	2,240

Note: Totals are all pollutants minus $PM_{2.5}$ and HAPs because $PM_{2.5}$ is a subset of PM_{10} and HAPs are a subset of VOCs.

Table 4-12. Increase in Annual Air Emissions From 2007 Conditions on BLM-Administered Lands Within the RFO Area (Tons Per Year)

Time Frame	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs
No Action Alternative							
2007	192	131	213	19	648	171	16
2022	229	146	443	23	1,206	348	35
Change in emissions from base year	19%	11%	108%	21%	86%	104%	106%
Alternative A							
2007	192	131	213	19	648	171	16
2022	250	150	443	23	1,206	348	35
Change in emissions from base year	30%	14%	108%	21%	86%	104%	106%
Change in emissions from No Action	9%	2%	0%	0%	0%	0%	0%
Proposed RMP							
2007	192	131	213	19	648	171	16
2022	250	150	443	23	1,206	348	35
Change in emissions from base year	30%	14%	108%	21%	86%	104%	106%
Change in emissions from No Action	9%	2%	0%	0%	0%	0%	0%
Alternative C							
2007	192	131	213	19	648	171	16
2022	233	148	443	23	1,206	348	35
Change in emissions from base year	21%	11%	108%	21%	86%	104%	106%
Change in emissions from No Action	2%	0%	0%	0%	0%	0%	0%
Alternative D							
2007	192	131	213	19	648	171	16
2022	232	146	433	23	1,204	348	34

Time Frame	PM_{10}	$PM_{2.5}$	NO_x	SO_2	CO	VOC	HAPs
Change in emissions from base year	21%	11%	108%	21%	86%	104%	106%
Change in emissions from No Action	1%	0%	0%	0%	0%	0%	0%

4.3.2 Soil Resources

Soils within the RFO are susceptible to impacts from compaction and disturbance, which can lead to accelerated erosion, soil loss, and reduced productivity. Management actions that involve ground-disturbing activities, reducing vegetation cover, trampling, and using vehicles and heavy machinery can result in such impacts, especially in areas in which natural erosion rates are very high because of soil or geologic factors. The greatest impacts to soil come from cross-country vehicle travel, the use of vehicles on poorly constructed routes, mineral operations, and visitor use. The effects of cross-country travel include reduction or disturbance of surface cover (e.g., soil-holding vegetation, litter, rocks), displaced soil particles, increased soil compaction, creation of new flow paths and channels, and increased runoff. Combined, these effects increase soil erosion. The effects of travel on poorly constructed routes are similar to the effects of cross-country travel. Thus, the greater the number of poorly constructed routes that are left open, the greater the impacts through compaction and erosion.

Surface disturbances generally increase soil susceptibility to erosion and compaction, which in turn increases the potential for offsite movement, salinity and sediment delivery to streams, and adverse impacts on soil resources. However, short-term activities that disturb soils may sometimes be necessary to make long-term improvements in soil condition and vegetation cover. Activities such as land treatment are expected to slow erosion rates and improve soil productivity, water-holding capacity, and nutrient cycling capability.

Proposed decisions that allow surface-disturbing activities pose greater risks for adverse impacts to soils and, in some places and situations (e.g., OHV open areas and certain activities allowed under VRM Classes III and IV), to the associated biological crusts. Decisions that restrict surface disturbing activities (e.g., OHV limited and closed areas, restrictions to vegetation and surface disturbance under VRM Classes I and II, mineral withdrawals, special designations) are generally beneficial. Some surface disturbing activities (e.g., hazardous fuels treatments, other vegetation treatments) could have adverse short-term but beneficial long-term impacts. Sometimes soil disturbance could be required for successful restoration treatments (e.g., tillage to alleviate compaction, scarifying to incorporate seed). Although the implementation of SRH, BMPs, and other soil-protection measures to maintain long-term soil productivity is common to all alternatives, the risks of adverse soil impacts because of surface-disturbing activities varies by alternative.

Methods and Assumptions

This analysis was based on the following assumptions:

- Soil resources would be managed to meet Standard 1 of Utah's SRH and *Guidelines for Grazing Management*.
- Substantial surface disturbance to soil, including compaction of soil or loss of vegetative cover, could increase water runoff and downstream sediment loads and could lower soil productivity, thereby degrading water quality, altering channel structure, and affecting overall watershed health.
- The degree of impact attributed to any one disturbance or series of disturbances would be influenced by several factors, including location within the watershed, time and degree of disturbance, existing vegetation, and precipitation.
- An increase of pollutants in surface waters would affect other beneficial uses (e.g., stock watering, irrigation, drinking water supplies).
- Roads and trails would be properly designed.
- Surface disturbances would be restored or mitigated.

Impact analyses and conclusions are based on interdisciplinary team knowledge of resources in the RFO, review of existing literature, and information provided by other agencies. Effects are quantified when possible. Spatial analyses were conducted by using GIS data and analyses. Impacts are described by using ranges of potential impacts or in qualitative terms, if appropriate.

Environmental Consequences

Impacts to soils would likely result from actions proposed under the following resource management programs:

- Air Quality, Soil Resources, and Water Resources
- Vegetation and Fire and Fuels Management
- Visual Resources
- Special Status Species
- Fish and Wildlife
- Wild Horses and Burros
- Non-WSA Lands with Wilderness Characteristics
- Forestry and Woodland Products
- Livestock Grazing
- Recreation
- Travel Management
- Lands and Realty
- Minerals and Energy
- Special Designations

Other programs were determined to have little or no impact on soils.

Alternative N: No Action

Impacts from Air Quality, Soil Resources, and Water Resources

Specific stipulations and permit requirements, including reclamation plans to protect soils during and after surface-disturbing activities in the RFO, would minimize the types of impacts described above. These stipulations include the requirement that all surface-disturbing activities are the minimum necessary to complete the task; reclamation plans for road upgrades or realignments; specific soil-stability measures for all surface-disturbing activities and saline soils; and closing and reclaiming temporary roads, facilities, and improvements that are no longer necessary. Impacts would be minor RFO-wide but could be moderate at specific sites. In the long-term, these actions would reduce soil compaction and surface runoff.

Impacts from Vegetation and Fire and Fuels Management

Managing vegetation communities and associations to achieve the SRH could increase organic matter content, structure, and permeability, thereby improving the overall productivity of soils. In addition, Alternative N allows for only limited treatment of vegetation, although a full range of tools (including mechanical, wildland or prescribed fire, and chemical methods) would be available. Restoration and vegetation-treatment projects aimed at improving vegetation health and cover would reduce erosion potential and increase soil productivity. However, mechanical, manual, or chemical treatments could result in soil compaction, some loss in vegetation cover, erosion, and changes in soil chemistry and thus could result in erosion. Restrictions in sensitive areas would help protect fragile soil resources in such habitats. These management actions would improve soil stability and prevent soil loss because of erosion. Initially, vegetation treatments change the vegetation structure and increase local erosion and

sedimentation rates. In the long term, vegetation treatments would improve cover and increase plant diversity, thereby stabilizing soil, improving overall watershed function and condition, and allowing greater infiltration and soil moisture storage. Therefore, impacts would generally be beneficial overall.

Impacts to soils from vegetation management would occur from fire and fuels management. Impacts to soil resources related to wildland fires are complex and involve changes in nutrient cycling, water infiltration and runoff, and erosion potential. Impacts are a function of the severity of the burn, whether the vegetation community is adapted to fire and the fuel condition class of the vegetation community and the condition of soils (e.g., disturbed) before the burn. Alternative N allows for the full range of fire- and fuels-management actions to achieve ecosystem sustainability. High-severity fires remove vegetation and soil surface cover, which drastically increases the potential for wind and water erosion and sedimentation to streams. Off- and on-road use of heavy fire equipment to suppress fires would cause compaction, and chemical retardant could alter soil chemistry. Management prescriptions and post-fire rehabilitation would minimize some of these impacts. Suppressing fires in areas of excessive fuel buildup could minimize, in the short term, high-severity fires and the associated impacts of vegetation loss and erosion. However, continued suppression of wildland fires could result in increased fuel loading and could increase the risk of high-severity wildfires and adverse soil impacts in the long term. Impacts to soils associated with wildfire could be much greater because of a high percentage of vegetative cover loss and intense deep heating, resulting in soil sterilization and the creation of hydrophobic surface layers.

Impacts from Visual Resources

In general, VRM class designations would limit or allow surface-disturbing activities in certain areas, thereby affecting soil resources. VRM Classes I and II would be aimed at greater retention of existing landscape character than Classes III or IV would be. Under Alternative N, none of the lands managed by the RFO are classified as VRM Class I; 529,500 acres (25%) would be managed as VRM Class II; 569,000 acres (27%) would be managed as VRM Class III; and 1,029,500 acres (48%) would be managed as VRM Class IV. Managing areas as VRM Class II would reduce surface disturbance and would retain existing vegetation, thereby reducing soil erosion. Areas managed as VRM Class III or IV (75% of the RFO under Alternative N) would be subject to actions that allow for greater landscape modification and therefore greater surface disturbance. These areas could be subject to such actions as complete vegetation removal, which drastically increases the potential for wind and water erosion and sedimentation to streams.

Impacts from Special Status Species

Alternative N (and all the other alternatives) prohibits actions that destroy, adversely modify, or fragment federally listed species habitat; proposes habitat improvements for SSS; generally retains SSS habitat in federal ownership; and considers SSS habitat in all wildland fire-suppression efforts. The combined actions would have beneficial impacts on soils by helping to minimize surface disturbance, thereby maintaining soil productivity and limiting erosion. Springtime seasonal restrictions placed on surface-disturbing activities (e.g., to protect Greater sage-grouse breeding habitat) could also minimize compaction by reducing equipment operations when soils are moist and most susceptible.

Impacts from Fish and Wildlife

Proposed decisions for fish and wildlife, such as avoiding habitat fragmentation, reducing road densities, and restricting surface disturbance or surface occupancy within 500 feet of riparian areas, would have beneficial impacts on soils by reducing erosion, compaction, or vegetation loss within the riparian buffer zone. These management actions would improve soil stability and prevent soil loss caused by erosion.

Alternative N also proposes habitat treatments to meet terrestrial, aquatic, and riparian habitat objectives. These vegetation treatments would initially change the vegetation structure and would increase local

erosion and sedimentation rates. However, in the long term, vegetation treatments would improve cover and increase plant diversity, thereby stabilizing soil, improving overall watershed function and condition, and allowing greater infiltration and soil moisture storage. Therefore, impacts would be beneficial overall.

Impacts from Wild Horses and Burros

In general, the greater the number of burros, the greater the possibility of adverse impacts on soil resources because of trampling, compaction, and reduced vegetation cover. Under Alternative N, 100 animal unit months (AUM) are allocated to burros in the Canyonlands Herd Management Area (HMA), although no appropriate management level (AML) is established. These numbers are greater than Alternative A (which establishes an AML of zero and allocates no AUMs) but less than the Proposed RMP, C, or D (which establish a herd size of between 120 to 200 head). Impacts to soils under Alternative N would be minimal because of the small herd size.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under Alternative N, resulting in no additional protection for soils.

Impacts from Forestry and Woodland Products

Conducting commercial timber harvests on a case-by-case basis west of Capitol Reef National Park could result in localized surface disturbance, soil compaction, and changes in vegetation community composition and structure. Soil compaction would reduce water infiltration and could reduce plant growth and nutrient cycling. Indirectly, this could increase sediment loading in streams and could reduce riparian-wetland function. Implementing mitigation measures would reduce the long-term effects of these impacts. Removal of dead and down material would reduce large-size fuels and could alter the physical properties of soil resources.

Alternative N allows for harvesting of forest and woodland products across most of the RFO (i.e., all areas, outside of WSAs, on a case-by-case basis). Harvesting of forest and woodland products would have localized minor-to-moderate impacts on soils from vehicle use to access the harvesting site and from loss of vegetative cover. Indirect effects would include reduced soil infiltration, increased erosion and sedimentation, increased soil surface temperatures, and short- or long-term changes in species composition or community structure. However, removal of pinyon and juniper trees from areas in which they have invaded or areas in which canopy densities have increased would result in reduced amounts of bare ground and increased litter at the soil surface. Because pinyon pine and juniper vigorously compete with other plants for available soil water, their removal allows for regrowth of grasses and shrubs in the understory vegetation. This regrowth provides a protective vegetative cover for the soil surface, resulting in decreased erosion.

Impacts from Livestock Grazing

Under Alternative N, 138,952 acres would continue to be unavailable to livestock grazing, while 1,989,048 acres would continue to be available to grazing. Livestock grazing can increase soil compaction in trailing, watering, and mineral-supplement areas. However, livestock grazing within the RFO would be managed in keeping with applicable laws and regulations and with the *Fundamentals of Rangeland Health* and the *Standards and Guidelines for Grazing Administration*. Adhering to these standards and guidelines would minimize impacts from livestock grazing by maintaining plant vigor and by increasing litter accumulation, resulting in the maintenance or improvement of organic matter content, soil structure, permeability, and productivity. This maintenance or improvement would ensure that upland soils would exhibit infiltration, permeability, and erosion rates that are appropriate to soil type, climate, and landform. Impacts would therefore be minor area-wide but potentially moderate in specific areas in which livestock tend to congregate.

Impacts from Recreation

Recreational activities have site-specific impacts to soil resources near frequent and high-use areas such as campgrounds, parking lots, trailheads, and other recreation-related use areas. Long-duration trail use (e.g., walking, equestrian, OHV, mountain biking), especially during wet periods, could result in soil compaction and loss of vegetation cover, and could lead indirectly to increased erosion and loss of soil resources. Large-group recreation events and camping could compact soils, which could change infiltration rates and the distribution of water in soil and could increase surface runoff. Increased runoff and soil erosion would lower the functioning condition of the riparian area. These impacts would be site-specific and localized (Hammitt and Cole 1998).

Visitor use is expected to increase throughout the RFO. Under Alternative N, the entire RFO (with the exception of Yuba Reservoir, which is managed by the Fillmore Field Office [FO]) is identified and managed as an extensive recreation management area (ERMA). Management of recreation in ERMAs is restricted to custodial actions only, with no special prescriptions that would affect soils identified. Thus, intensively used recreation sites (such as near Otter Creek, Big Rock, Factory Butte, or Dirty Devil/Robbers Roost) would experience more intense, regular impacts to soils. Impacts to soils in these areas occur from OHV use and use by large numbers of visitors in a limited space. These activities result in loss of vegetation cover and soil compaction, leading to increased wind and water erosion. These impacts to soils would continue under Alternative N or might increase as visitor use increases.

Impacts from Travel Management

Generally, the more area open to OHV use, the greater the potential for adverse impacts to soil resources from trampling of vegetation and biological soil crusts, which leads to compaction and accelerated erosion. Limiting travel to designated routes confines the impacts to areas already disturbed or hardened for vehicle use. Under Alternative N, 1,636,400 acres (77%) of the RFO would be open to motorized vehicles, allowing potential impacts to soil over a large portion of the RFO; motor vehicles would be limited to existing, designated, and maintained routes on 277,600 acres (13%) of the RFO; and 214,000 acres (10%) of the RFO would be closed to motorized vehicle use. The public would have access to 4,315 miles of unpaved routes in the RFO. Use of these routes would continue to create the potential for soils impacts in the immediate vicinity of these routes.

Among the alternatives, Alternative N would have the greatest adverse impacts to soils because of the large amount of lands open to cross-country motorized use.

Impacts from Lands and Realty

Withdrawing lands from all forms of entry, location, selection, sale, or leasing under the public land laws would provide protection to soils from the mining exploration and development impacts that could cause soil compaction and erosion. Alternative N proposes a total of 169,480 acres of withdrawals. Mining disturbance and associated soil-resource impacts would therefore not occur in these areas.

Retaining habitat for listed and candidate species in federal ownership would continue to provide protection to soils in these areas. Identifying 760 acres as available for sale, compared with retaining the land in federal ownership, could make these lands susceptible to increased impacts to soils because the BLM would implement BMPs for the protection of soils in any actions it authorizes.

Any new land use authorizations (e.g., ROWs, permits, leases, easements) could impact soils through compaction and vegetation removal, which could lead to erosion. Under Alternative N, all ACECs (14,780 acres), eligible WSR corridors (12 segments—135 miles), areas closed to leasing (459,700 acres), and areas open to leasing subject to major constraints (no surface occupancy [NSO]) (22,600 acres) would be managed as ROW avoidance areas. Exceptions would be granted only when the proposed

authorization would not create substantial surface disturbance or would create only temporary impacts. Thus, impacts to soils in these avoidance areas would be negligible-to-minor and localized.

Impacts from Minerals and Energy

Disturbance of soils associated with mineral resource development would contribute to adverse impacts to soils, including loss of vegetative cover and soil productivity. In particular, noxious weed infestation resulting from disturbance of reclamation-limited soils would impact soil productivity. Biological soil crusts would potentially be crushed during surface disturbance and would no longer be protected from wind or water erosion.

The acreage in each leasing category would quantify impacts to soils, in terms of acres of surface disturbance. The categories, listed from greatest to least amount of surface disturbance, are as follows: open to leasing subject to the standard terms and conditions, open to leasing subject to moderate constraints (timing limitation [TL], controlled surface use [CSU]), open to leasing subject to major constraints [NSO], and closed to leasing. Generally, areas that are closed to leasing or open to leasing subject to major constraints (NSO) would experience little or no surface disturbance caused by minerals development; thus, negligible or no adverse impacts to soils would occur. Areas open to leasing subject to standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU) would experience short- and long-term impacts to soils from surface disturbance associated with minerals development. These short- and long-term adverse impacts would include destruction of biological soil crusts, erosion and subsequent sedimentation of surface waters, changes in surface hydrology and infiltration, and possible alteration of soil chemistry or productivity by noxious weeds.

Under Alternative N, 459,700 acres would be closed to leasing; 22,600 acres would be open to leasing subject to major constraints (NSO); and 1,645,700 acres would be open to leasing subject to standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU). Closing or withdrawing areas from mineral operations would prevent impacts to soils within those areas. In addition, adherence to BMPs outlined in mining laws, plans of operation, pertinent restrictions, and standard terms and conditions would help minimize impacts to soils.

Impacts from Special Designations

Wilderness Study Areas

Managing WSAs pursuant to the Interim Management Policy (IMP) for Lands Under Wilderness Review would prevent most ground-disturbing activities. This management would result in protection for soil resources.

Wild and Scenic Rivers

Protecting the outstandingly remarkable values of the eligible WSRs would help protect soil by preventing ground-disturbing activities in the river corridors. All eligible segments (12 segments—135 miles) would be managed to protect their outstandingly remarkable values, free-flowing nature, and tentative classification under Alternative N. This management would benefit soils by limiting ground disturbance in these areas.

Areas of Critical Environmental Concern

Although ACEC designation alone does not necessarily provide protection for soils, management actions included in ACECs are often more restrictive, thus indirectly providing protection. ACEC-associated protections that would affect soils include managing oil and gas leasing as closed to leasing or open to leasing subject to major constraints (NSO), implementing more restrictive VRM designations, restricting livestock grazing,; and implementing travel limitations. Alternative N continues the designation of four

ACECs (14,780 acres). Allowing no uses that would cause irreparable damage to the relevant and important values in these areas would involve closing the ACECs to OHV use; managing the ACECs as closed to leasing or as open to leasing subject to major constraints (NSO), depending on the ACEC; making three of the four ACECs unavailable for livestock grazing; and acquiring inholdings. These restrictions would reduce surface-disturbing activities within the four ACECs, thus protecting soil resources.

Alternative A

Impacts from Air Quality, Soil Resources, and Water Resources

Impacts would be the same as those described under Alternative N.

Impacts from Vegetation and Fire and Fuels Management

The types of impacts experienced as a result of vegetation and fire and fuels management would be similar to those described under Alternative N, although under Alternative A, maximum treatment acreage limits would be set (averaging 73,600 annually for all treatments). No target (maximum or minimum) treatment acreage limits would be set under Alternative N. It is therefore likely that in some years, fewer acres would be treated under Alternative N; however, in other years (when there are numerous wildland fires) more acres could be treated because the 2005 Land Use Plan Amendment for Fire and Fuels Management allows the full range of fire and fuels management actions to achieve ecosystem sustainability.

Full suppression of wildland fires is not mandated under Alternative A. Thus, impacts to soils under Alternative A would likely result in decreased short-term impacts (altered vegetation structure and increased local erosion and sedimentation rates) compared to Alternative N. However, continued suppression of wildland fires could result in increased fuel loading and increase the risk of high-severity wildfires and adverse soil impacts in the long term. Impacts to soils associated with wildfire would then be much greater in the long term because of a high percentage of vegetative cover loss and intense deep heating from high-intensity fires, resulting in soil sterilization and creation of hydrophobic surface layers.

Impacts from Visual Resources

The types of impacts experienced as a result of VRM decisions would be similar to those described under Alternative N. Under Alternative A, 446,900 acres (21% of the lands managed by the RFO) would be designated as VRM Class I; 0 acres would be designated as VRM Class II; 392,800 acres (18%) would be designated as VRM Class III; and 1,288,300 acres (61%) would be designated as VRM Class IV. Designating the majority of the RFO as VRM Class III or IV could result in large areas of moderate-to-major modifications in the existing character of the landscape, with accompanying surface disturbance. These areas could be subject to such actions as complete vegetation removal, which would drastically increase the potential for wind and water erosion and sedimentation to streams. Thus, Alternative A has the greatest potential to impact soils.

Impacts from Special Status Species

The types of impacts experienced as a result of SSS management would be similar to those described under Alternative N. However, Alternative A includes additional strategies (including employing directional drilling for oil and gas, closing and reclaiming roads, mitigating the effects of proposed projects that have the potential to cause long-term or permanent impacts or losses of habitat, and using species-specific buffers for surface-disturbing activities) to avoid or reduce fragmenting habitat. The combined actions would have beneficial impacts on soils by helping to maintain soil productivity and limit erosion. Springtime seasonal restrictions placed on surface-disturbing activities (e.g., to protect Greater sage-grouse breeding habitat) could also minimize compaction by reducing equipment operations when soils are moist and most susceptible.

Impacts from Fish and Wildlife

The types of impacts experienced as a result of fish and wildlife management would be similar to those described under Alternative N. However, Alternative A proposes restricting surface disturbance or surface occupancy within 330 feet of riparian areas (versus 500 feet for Alternative N) and includes fewer restrictions on OHV use in crucial wildlife habitats. These management actions would increase the potential for soils impacts under this alternative.

Impacts from Wild Horses and Burros

In general, the greater the number of burros, the greater the possibility of adverse impacts on soil resources. Under Alternative A, no AUMs would be allocated to burros in the Canyonlands HMA, and the AML would be set at zero. Keeping the AML at zero would eliminate impacts that trampling, compaction, and reduced vegetation cover could cause to soils.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under Alternative A, resulting in no additional protection for soils.

Impacts from Forestry and Woodland Products

Alternative A allows for harvesting of forest and woodland products across most of the RFO (i.e., all areas, outside of WSAs) where sustainable and compatible with restoring, maintaining, or improving forest health. The types of impacts would be similar to those described for Alternative N. However, Alternative A includes objectives to emphasize woodland health, one component of which is maximizing soil productivity and minimizing soil loss. These objectives would be emphasized and addressed for harvesting and mitigation included as appropriate to reduce the potential for soil compaction and erosion. Thus, management of forestry and woodland products under Alternative A would have less potential to adversely impact soils than under Alternative N and may result in beneficial impacts by improving woodland health.

Impacts from Livestock Grazing

Under Alternative A, 102,002 acres would be unavailable to livestock grazing and 2,025,998 acres would be available for grazing. Livestock grazing can increase soil compaction in trailing, watering, and mineral-supplement areas. However, livestock grazing within the RFO would be managed in keeping with applicable laws and regulations, with the *Fundamentals of Rangeland Health* and *Standards and Guidelines for Grazing Administration*, and with BLM's riparian policy. Adhering to these statewide standards, guidelines, and policy would minimize impacts from livestock grazing by maintaining plant vigor and increasing litter accumulation, resulting in the maintenance or improvement of organic matter content, soil structure, permeability, and productivity. This would ensure that upland soils would exhibit infiltration, permeability, and erosion rates that are appropriate to soil type, climate, and landform. Impacts would therefore be minor area-wide, but potentially moderate in specific areas in which livestock tend to congregate.

Impacts from Recreation

Under Alternative A, five Special Recreation Management Areas (SRMA) (514,500 acres) would be established to manage recreational use and to mitigate impacts caused by this use, such as uncontrolled camping, parking, and other activities. Limiting OHV use in the Otter Creek Reservoir SRMA to designated routes would maintain existing soil, water, and riparian resource conditions by concentrating impacts to already disturbed areas and by reducing the extent of soil compaction. Maintaining the existing condition of riparian-wetland areas would reduce soil erosion. Reducing the extent of soil compaction would indirectly maintain existing infiltration and soil-water distribution patterns.

The construction of recreation facilities in the Big Rock SRMA could have localized short-term adverse impacts, including soil compaction, reduced infiltration, and changes in surface hydrology; long-term impacts to soils would be beneficial by concentrating use areas and thus limiting the extent of soil disturbance. Managing the Dirty Devil/Robbers Roost SRMA (290,000 acres) for primitive and semi-primitive recreation would indirectly maintain or reduce the potential for soil disturbance from recreation. Limiting OHV recreation use in the Dirty Devil/Robbers Roost SRMA to designated routes would reduce potential surface disturbance and localized soil erosion. Managing the Sahara Sands SRMA (12,300 acres) for a roaded natural recreational opportunity and the development of facilities would have site-specific impacts, including soil compaction, changes in surface hydrology, and increased runoff. Managing the Factory Butte SRMA (199,700 acres) for a motorized recreational opportunity and allowing moderate-to-extensive landscape modification would have potentially major impacts, including vegetation removal, soil compaction, changes in surface hydrology, and increased runoff over a relatively large area.

Impacts from Travel Management

The types of impacts experienced as a result of travel management would be similar to those described under Alternative N. However, Alternative A designates 449,000 acres (21%) of the RFO as open to motorized vehicles; motor vehicles would be limited to designated routes on 1,679,000 acres (79%) of the RFO; and 0 acres would be closed to motorized vehicle use. The amount of open areas, although greatly reduced compared to Alternative N, would still result in impacts to soil from vehicle use in those areas. The remainder of the RFO would have motorized use limited to designated routes: the public would have access to 4,312 miles of unpaved routes while 68 miles of routes would be closed (both of which are essentially the same as Alternative N). No areas would be closed to motorized use, with no accompanying benefits to soils.

Impacts from Lands and Realty

The types of impacts experienced as a result of lands and realty management would be similar to those described under Alternative N, although impacts to soils could occur over a larger area because of fewer acres proposed for withdrawal (154,700 acres under Alternative A), more acres proposed for disposal (13,400 acres), and fewer ROW avoidance areas (446,900 acres closed to oil and gas leasing). Thus, impacts to soils from surface disturbing activities (such as compaction and vegetation removal, which could lead to erosion) would be greater under Alternative A than under Alternative N.

Impacts from Minerals and Energy

The types of impacts experienced as a result of minerals and energy management would be similar to those described under Alternative N. Development of oil and gas resources could affect soils because of the surface disturbances associated with such development. However, adherence to BMPs outlined in mining laws, plans of operation, pertinent restrictions, and standard terms and conditions would help minimize impacts to soils. Closing or withdrawing areas from mineral operations would prevent impacts to soils within those areas. (See the Impacts from Lands and Realty section for a discussion of withdrawals.) Alternative A proposes fewer acres of mineral withdrawals (154,700 acres), which would provide less protection to soils, compared to Alternative N.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Under Alternative A, no eligible river segments would be recommended as suitable, and no special management to protect the outstandingly remarkable values of these rivers would be provided. Thus,

impacts to soils from surface-disturbing activities (such as compaction and vegetation removal, which could lead to erosion) could occur in the river corridors. Potential impacts to soils from WSR decisions could be greatest under this alternative. However, because most of the eligible river segments (98 of the 135 total miles) are within WSAs, none of the previously described ground-disturbing activities would occur in those river corridors.

Areas of Critical Environmental Concern

Under Alternative A, no areas would be designated as ACECs. Providing no special management prescriptions would allow surface-disturbing activities within those areas, which could result in impacts to soils.

Proposed RMP

Impacts from Air Quality, Soil Resources, and Water Resources

Impacts would be the same for all alternatives (as described in Alternative N).

Impacts from Vegetation and Fire and Fuels Management

Impacts would be the same as those described under Alternative A.

Impacts from Visual Resources

The types of impacts experienced as a result of VRM decisions would be similar to those described under Alternative N. Under the Proposed RMP, 446,900 acres (21% of the lands managed by the RFO) would be designated as VRM Class I; 249,800 acres (12%) would be designated as VRM Class II; 393,100 acres (18%) would be designated as VRM Class III; and 1,038,200 acres (49%) would be designated as VRM Class IV. Although the majority of the RFO would be designated as VRM Class III or IV (which could result in large areas of moderate-to-major modifications in the existing character of the landscape, with accompanying surface disturbance and potential for wind and water erosion and sedimentation to streams), less of the RFO would be designated in these VRM classes than in Alternatives N or A, resulting in less potential impacts to soils, compared to those alternatives.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative A.

Impacts from Fish and Wildlife

Impacts to soils under the Proposed RMP would be similar to those described for Alternative A. However, the Proposed RMP also proposes temporal (i.e., winter and/or spring, depending on species) restrictions on surface-disturbing activities (to protect wildlife during critical life stages) and restricts OHV use in deer and elk crucial habitats. These management actions would also benefit soils by limiting activities during wet seasons (which would reduce soil compaction) and restricting activities that could result in vegetation loss. These management actions would improve soil stability and prevent soil loss caused by erosion.

Impacts from Wild Horses and Burros

Under the Proposed RMP, 600 AUMs are allocated to burros in the Canyonlands HMA to meet an AML upper limit of 100. These numbers are greater than either Alternative N or A, but less than C or D (which establish a herd size of between 120 and 200 head). Because more burros results in a greater possibility of adverse impacts on soil resources because of trampling, compaction, and reduced vegetation cover, the Proposed RMP would potentially impact soils more than Alternatives N or A but less than Alternatives C or D.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under the Proposed RMP, 78,600 acres would be managed to maintain wilderness characteristics. Management actions to achieve this objective include designating the area as closed to leasing or open to leasing subject to major constraints (NSO), limiting motorized uses to designated routes, and designating the area as VRM Class II. The emphasis on naturalness and a lack of surface-disturbing activities within these areas would minimize impacts to soils from surface-disturbing activities (such as compaction and vegetation removal, which could lead to erosion).

Impacts from Forestry and Woodland Products

The types of impacts experienced as a result of forest and woodland products management would be similar to Alternative A, although more lands would be closed to this type of use under the Proposed RMP (one WSR segment—5 miles, compared to zero segments under Alternative A). Thus, localized surface disturbance, soil compaction, and changes in vegetation community composition and structure would be less under the Proposed RMP than under Alternative A.

Impacts from Livestock Grazing

The types of impacts experienced as a result of livestock grazing decisions would be similar to Alternative A, although less land would be available for grazing under the Proposed RMP (1,989,048 acres, compared to 2,025,998 acres under Alternative A). Thus, impacts to soils from livestock grazing (i.e., increased soil compaction in trailing, watering, and mineral-supplement areas) could occur over a larger area, although the difference between alternatives is negligible.

Impacts from Recreation

Under the Proposed RMP, five SRMAs (860,390 acres) would be established to manage recreational use and to mitigate impacts caused by this use, such as uncontrolled camping, parking, and other activities. Establishing a Factory Butte SRMA would limit the impacts of cross-country OHV use on soils to a 8,500 acre area. Construction of facilities in the Big Rock SRMA would have localized short-term impacts including soil compaction, reduced infiltration, and changes in surface hydrology. Managing the Dirty Devil/Robbers Roost SRMA (290,500 acres) for primitive and semi-primitive recreation would indirectly maintain or reduce the potential for surface disturbance from recreation. Closing canyons within the Dirty Devil/Robbers Roost SRMA to OHV recreation use and limiting OHV recreation use to designated routes would reduce potential surface disturbance and localized soil erosion. Managing the Capitol Reef Gateway SRMA (12,800 acres) for a natural recreation experience and the development of facilities would have site-specific impacts, including soil compaction, changes in surface hydrology, and increased runoff. Managing the Henry Mountains SRMA for primitive and semi-primitive recreation would indirectly maintain or reduce the potential for soil disturbance.

The Proposed RMP, which establishes more areas as SRMAs than either Alternative N or A but less than either Alternative C or D, therefore would provide more protection to soils as a result of recreation decisions than either Alternatives N or A and would provide less protection than Alternatives C or D.

Impacts from Travel Management

The types of impacts experienced as a result of travel management would be similar to those described under Alternative N. However, the Proposed RMP designates only 9,890 acres (less than 1% of the RFO) as open to motorized vehicles; motor vehicles would be limited to designated routes on 1,908,210 acres (90%) of the RFO; and 209,900 acres (10%) would be closed to motorized vehicle use. The amount of open areas, although greatly reduced as compared to Alternative N, would still result in impacts to soil from vehicle use in those areas. The remainder of the RFO would limit motorized use to designated routes—the public would have access to 4,277 miles of unpaved routes. Under the Proposed RMP, 345

miles of routes would be closed, allowing these areas to revegetate, which would benefit soils by reducing compaction, reducing runoff, increasing infiltration, and reducing erosion.

Impacts from Lands and Realty

The types of impacts experienced as a result of lands and realty management would be similar to those described under Alternative N. However, impacts to soils could occur over a smaller area because more acres would be proposed for withdrawal (176,200 acres under the Proposed RMP) and more acres would designated ROW avoidance areas (including 601,800 acres closed to leasing or open to leasing subject to major constraints [NSO], one suitable WSR segment—5 miles, and two ACECs—2,530 acres). Thus, impacts to soils from surface-disturbing activities (such as compaction and vegetation removal, which could lead to erosion) would be less under the Proposed RMP than under Alternative N.

Impacts from Minerals and Energy

The types of impacts experienced as a result of minerals and energy management would be similar to those described under Alternative N. Development of oil and gas resources could affect soils because of the surface disturbances associated with such development. However, adherence to BMPs outlined in mining laws, plans of operation, pertinent restrictions, and standard terms and conditions would help minimize impacts to soils. Closing or withdrawing areas from mineral operations would prevent impacts to soils within those areas. (See the Impacts from Lands and Realty section for a discussion of withdrawals.) The Proposed RMP proposes more acres of mineral withdrawals (176,200 acres) compared to Alternative N or A, which would preclude mineral and energy development in those areas and thus provide more protection to soils.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Protecting the outstandingly remarkable values of suitable WSRs would help protect soil by preventing ground-disturbing activities in the river corridor. One suitable segment (5 miles) would be managed to protect outstandingly remarkable values, free-flowing nature, and the wild classification under the Proposed RMP. This would benefit soils by limiting ground disturbance in this area. Of the remaining segments, 98 miles are within WSAs, leaving 32 miles on which ground-disturbing activities could potentially impact soils. The Proposed RMP would provide less protection to soils from WSR decisions than Alternative N, C, or D, but more protection than Alternative A.

Areas of Critical Environmental Concern

The Proposed RMP designates two ACECs (2,530 acres). Allowing no uses that would cause irreparable damage to the relevant and important values such as relic vegetation in these areas (i.e., closing to OHV use; managing as open to leasing subject to major constraints (NSO), depending on the ACEC; unavailable for livestock grazing; and acquiring inholdings) would reduce surface-disturbing activities within those areas, thus protecting soil resources.

Alternative C

Impacts from Air Quality, Soil Resources, and Water Resources

Impacts would be the same as those described under Alternative N.

Impacts from Vegetation and Fire and Fuels Management

The types of impacts experienced as a result of vegetation and fire and fuels management would be similar to those described under Alternative A, although under Alternative C fewer acres would be treated annually (averaging 26,000 annually for all treatments). In addition, Alternative C proposes using only natural processes to manage vegetation. Such processes could be less effective than conventional vegetation treatments and would not be effective in all vegetation communities. This approach could result in the loss of existing vegetation cover, indirectly increasing erosion. Thus, impacts to soils under Alternative C would likely result in reduced short-term impacts (altered vegetation structure and increased local erosion and sedimentation rates) compared to Alternative A, as well as reduced long-term impacts (improved vegetative cover and increased plant diversity, thereby stabilizing soil, improving overall watershed function and condition, and allowing greater infiltration and soil moisture storage).

Impacts from Visual Resources

The types of impacts experienced as a result of VRM decisions would be similar to those described under Alternative N. Under Alternative C, 446,900 acres (21% of the lands managed by the RFO) would be designated as VRM Class I; 230,600 acres (11%) would be designated as VRM Class II; 509,100 acres (24%) would be designated as VRM Class III; and 941,400 acres (44%) would be designated as VRM Class IV. Although the majority of the RFO would be designated as VRM Class III or IV (which could result in large areas of moderate-to-major modifications in the existing character of the landscape, with accompanying surface disturbance and potential for wind and water erosion and sedimentation to streams), less of the RFO would be designated in these VRM classes than in Alternative N or A or in the Proposed RMP, resulting in less potential impacts to soils compared to those alternatives.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative A.

Impacts from Fish and Wildlife

The types of impacts experienced as a result of fish and wildlife management would be similar to those described under Alternative A. However, Alternative C proposes restricting surface disturbance or surface occupancy within 660 feet of riparian areas (versus 330 feet for Alternative A), includes more restrictions on OHV use in crucial wildlife habitats, and designates an ACEC in the Henry Mountains (288,200 acres) for the protection of wildlife values. These additional management actions would decrease the potential for soils impacts under Alternative C.

Impacts from Wild Horses and Burros

Under Alternative C, 1,200 AUMs are allocated to burros in the Canyonlands HMA to meet an AML upper limit of 200. These numbers are greater than Alternative N, A, or the Proposed RMP. Because more burros result in a greater possibility of adverse impacts on soil resources because of trampling, compaction, and reduced vegetation cover, Alternative C would potentially impact soils more than Alternatives N, A, or the Proposed RMP.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under Alternative C, resulting in no additional protection for soils.

Impacts from Forestry and Woodland Products

The types of impacts experienced as a result of forestry and woodlands management would be similar to the Proposed RMP, although more lands would be closed to this type of use under Alternative C (12 WSR

segments—135 miles). Thus, localized surface disturbance, soil compaction, and changes in vegetation-community composition and structure would be less under Alternative C than under the Proposed RMP.

Impacts from Livestock Grazing

Impacts would be the same as those described under the Proposed RMP.

Impacts from Recreation

Under Alternative C, four SRMAs (930,000 acres) would be established to manage recreational use and to mitigate impacts caused by this use, such as uncontrolled camping, parking, and other activities. Managing the Dirty Devil/Robbers Roost SRMA (375,800 acres) for dispersed recreation in a primitive setting would indirectly maintain or reduce the potential for surface disturbance from recreation. Managing the Capitol Reef Gateway SRMA (12,800 acres) for a natural recreation experience and the development of facilities would have site-specific impacts including soil compaction, changes in surface hydrology, and increased runoff. Managing the Henry Mountains SRMA (533,900 acres) for primitive and semi-primitive recreation would indirectly maintain or reduce the potential for soil disturbance. Managing the Sevier Canyon SRMA (7,500 acres) for scenic values would indirectly maintain and protect vegetation and soil resources that contribute to the scenic qualities of Sevier Canyon.

Alternative C, which establishes more areas as SRMAs than Alternative N, A, or the Proposed RMP but fewer areas than Alternative D, therefore would provide more protection to soils as a result of recreation decisions than Alternative N or A or the Proposed RMP and would provide less protection than Alternative D.

Impacts from Travel Management

The types of impacts experienced as a result of travel management would be similar to those described under the Proposed RMP. However, Alternative C designates no areas as open to motorized vehicles; motor vehicles would be limited to designated routes on 1,445,000 acres (68%) of the RFO; and 683,000 acres (32%) would be closed to motorized vehicle use. The lack of open areas would eliminate impacts to soil from vehicle use in those areas. Limiting motorized use to designated routes—the public would have access to 3,192 miles of unpaved routes—would generally limit soils impacts to areas in the immediate vicinity of the designated route. Under Alternative C, 1,188 miles of routes would be closed, allowing these areas to revegetate, which would benefit soils by reducing compaction, reducing runoff, increasing infiltration, and reducing erosion.

Impacts from Lands and Realty

The types of impacts experienced as a result of lands and realty management would be similar to those described under Alternative N. However, impacts to soils could occur over a much smaller area because of an increase in acres proposed for withdrawal (331,100 acres under Alternative C) or designated as ROW avoidance areas; 735,000 acres closed to leasing or open to leasing subject to major constraints [NSO], 12 suitable WSR segments (135 miles) and 16 ACECs (886,810 acres). Thus, impacts to soils from surface-disturbing activities (such as compaction and vegetation removal, which could lead to erosion) would be less under Alternative C, compared to Alternative N.

Impacts from Minerals and Energy

The types of impacts experienced as a result of minerals and energy management would be similar to those described under Alternative N. Development of oil and gas resources could affect soils because of the surface disturbances associated with such development. However, adherence to BMPs outlined in mining laws, plans of operation, pertinent restrictions, and standard terms and conditions would help minimize impacts to soils. Closing or withdrawing areas from mineral operations would prevent impacts to soils within those areas. (See the Impacts from Lands and Realty section for a discussion of

withdrawals.) Alternative C proposes more acres of mineral withdrawals (331,100 acres) than do Alternative N, A, or the Proposed RMP. This increase would preclude mineral and energy development in those areas and thus provide more protection to soils.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Protecting the outstandingly remarkable values of suitable WSRs would help protect soil by preventing ground-disturbing activities in the river corridors. All 12 suitable segments (135 miles) would be managed to protect their outstandingly remarkable values, free-flowing nature, and tentative classification under Alternative C. This would benefit soils by limiting ground disturbance in these areas.

Areas of Critical Environmental Concern

Alternative C designates 16 ACECs (886,810 acres). Allowing no uses that would cause irreparable damage to the relevant and important values in these areas (closing to OHV use; managing as either closed to leasing or open to leasing subject to major constraints (NSO), depending on the ACEC; designating as VRM Class II; making them unavailable for livestock grazing; and acquiring inholdings) would reduce surface-disturbing activities within those areas, thus protecting soil resources.

Alternative D

Impacts from Air Quality, Soil Resources, and Water Resources

Impacts would be the same as those described under Alternative N.

Impacts from Vegetation and Fire and Fuels Management

Impacts would be the same as those described under Alternative C.

Impacts from Visual Resources

The types of impacts experienced as a result of VRM decisions would be similar to those described under Alternative N, although these impacts would occur over a much smaller area because of differences in VRM class designations between the two alternatives. Under Alternative D, 1,129,600 acres (53% of the lands managed by the RFO) would be designated as VRM Class I; 66,700 acres (3%) would be designated as VRM Class II; 355,100 acres (17%) would be designated as VRM Class III; and 576,600 acres (27%) would be designated as VRM Class IV. Just more than half of the RFO would be designated as VRM Class I or II, meaning that the existing character of the landscape must be preserved or retained. Thus, surface-disturbing activities would generally not be allowed in these areas, resulting in reduced potential for wind and water erosion and sedimentation to streams and less potential impacts to soils compared to Alternative N, A, or C or the Proposed RMP.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative A.

Impacts from Fish and Wildlife

Impacts would be the same as those described under Alternative C.

Impacts from Wild Horses and Burros

Impacts would be the same as those described under Alternative C.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under Alternative D, 682,600 acres would be managed to maintain wilderness characteristics. Management actions to achieve this objective include closing to oil and gas leasing, closing to OHV use, and designating as VRM Class I. The emphasis on naturalness and a lack of surface-disturbing activities within these areas would minimize impacts to soils from surface-disturbing activities (such as compaction and vegetation removal, which could lead to erosion). Therefore, of all the alternatives, Alternative D would therefore be most beneficial to soils.

Impacts from Forestry and Woodland Products

Impacts would be similar to those described for Alternative C, except that no commercial or non-commercial forest and woodland products resource use would be allowed within the 682,600 acres of non-WSA lands with wilderness characteristics. Thus, localized surface disturbance, soil compaction, and changes in vegetation community composition and structure would be greatly reduced under Alternative D, compared to all of the other alternatives.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative C.

Impacts from Recreation

Under Alternative D, seven SRMAs (1,358,100 acres) would be established to manage recreational use and to mitigate impacts caused by this use, such as uncontrolled camping, parking, and other activities. Managing these SRMAs for dispersed recreation in a primitive or semi-primitive setting would indirectly maintain or reduce the potential for surface disturbance from recreation. Associated management actions (closing or limiting OHV use and precluding development of facilities) would have minimize the potential for site-specific impacts including soil compaction, changes in surface hydrology, and increased runoff, which would indirectly maintain and protect soil resources.

Impacts from Travel Management

The types of impacts experienced as a result of travel management would be similar to those described under Alternative C. However, Alternative D designates 972,800 acres (46% of the RFO) as limited to designated routes and 1,155,200 acres (54%) as closed to motorized vehicle use. The lack of open areas would eliminate impacts to soil from vehicle use in those areas. Limiting motorized use to designated routes—the public would have access to 3,043 miles of unpaved routes—would generally limit soils impacts to areas in the immediate vicinity of the designated route. Under Alternative D, 1,242 miles of routes would be closed, allowing these areas to revegetate, which would benefit soils by reducing compaction, runoff, and erosion and increasing infiltration.

Impacts from Lands and Realty

The types of impacts experienced as a result of lands and realty management would be similar to those described under Alternative N. However, impacts to soils could occur over a much smaller area because more acres would be recommended for withdrawal (903,900 acres under Alternative D) and more acres would be designated ROW avoidance areas (1,203,800 acres closed to leasing or open to leasing subject to major constraints [NSO], 12 suitable WSR segments, and 16 ACECs). Thus, impacts to soils from surface-disturbing activities (such as compaction and vegetation removal, which could lead to erosion) would be much less under Alternative D than under all the other alternatives.

Impacts from Minerals and Energy

The types of impacts experienced as a result of minerals and energy management would be similar to those described under Alternative N. However, impacts to soils could occur over a much smaller area

because more acres would be recommended for withdrawal (903,900 acres under Alternative D) and more areas would be closed to leasing or open to leasing subject to major constraints (NSO) (1,203,800 acres). Closing or withdrawing areas from mineral operations would prevent impacts to soils within those areas. Thus, impacts to soils from mining-related surface-disturbing activities (such as compaction and vegetation removal, which could lead to erosion) would be much less under Alternative D than under all the other alternatives.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Impacts would be the same as those described under Alternative C.

Areas of Critical Environmental Concern

Impacts would be the same as those described under Alternative C.

4.3.3 Water Resources

This section presents potential impacts to water resources from management actions for other resource programs. Existing conditions for water resources are described in Chapter 3. The discussion of impacts to water resources is limited to the effects of surface-disturbing activities on water quality and watershed health. Activities that disturb the land surface, decrease vegetation cover, or otherwise alter land surface cover would potentially affect water quality and watershed health.

Water quality within the planning area is influenced by both natural and human factors. Water quality problems created by natural geologic conditions are almost impossible to control. Water quality is generally good in the upper reaches of streams. As water flows downstream, the chemical and biological quality of the water deteriorates as salts accumulate, ground cover diminishes, water temperatures increase, fecal coliform from livestock and wildlife increases, and sediments accumulate. Most of the sediment discharge by streams in arid and semi-arid regions is transported during brief periods, usually as a result of thunderstorms. Water quality relative to sediment content is best during periods of low flow; water quality relative to chemical content is best during high flow. The State Division of Water Quality (DWQ) is responsible for adopting, enforcing, and administering state and federal water quality regulations.

Compared to other natural and human-caused factors that affect water quality within the planning area, Proposed RMP decisions would have minor impacts on water quality.

Methods and Assumptions

The analysis is based on the following assumptions:

- Substantial surface disturbance to soil, including compaction of soil or loss of vegetative cover, could increase water runoff and downstream sediment loads, thereby degrading water quality, altering channel structure, and affecting overall watershed health.
- The degree of impact attributed to any one disturbance or series of disturbances would be influenced by several factors, including location within the watershed, time and degree of disturbance, existing vegetation, soil type, and precipitation.
- Restrictions on surface-disturbing activities should help to protect and maintain current water quality and to minimize erosion and sedimentation.
- An increase of pollutants in surface waters could affect other beneficial uses (e.g., stock-watering, irrigation, fisheries and aquatic life, recreation, drinking-water supplies).
- Proposed decisions that allow surface-disturbing activities that impact soils could also adversely impact water quality.
- Increased erosion does not necessarily result in increased sedimentation to a perennial stream.
- Some surface-disturbing actions, such as vegetation management projects, could cause short-term adverse impacts to water quality immediately following treatments but could benefit water quality in the long term as vegetation becomes reestablished.
- Proposed decisions that limit surface-disturbing activities or that protect or restore soil, water, and vegetation resources could protect or improve water quality.

Environmental Consequences

Impacts to water resources would likely result from actions proposed under the following resource programs:

- Soil Resources and Water Resources

- Vegetation
- Fish and Wildlife
- Fire and Fuels Management
- Non-WSA Lands with Wilderness Characteristics
- Forestry and Woodland Products
- Livestock Grazing
- Recreation
- Travel Management
- Lands and Realty
- Minerals and Energy
- Special Designations

Other programs were determined to have little or no impact on water resources.

Alternative N: No Action

Impacts from Soil Resources and Water Resources

Specific stipulations and permit requirements, including reclamation plans, to protect water resources during and after surface-disturbing activities in the RFO would minimize impacts. These stipulations include requiring that all surface-disturbing activities be the minimum necessary to complete the task; requiring reclamation plans for road upgrades or realignments; requiring specific soil-stability measures for all surface-disturbing activities and saline soils; closing and reclaiming temporary roads, facilities, and improvements that are no longer necessary; and maintaining a 500-foot buffer zone of no surface disturbance or surface occupancy around all springs to protect water quality. Impacts would be minor RFO-wide, but potentially moderate at specific sites. In the long term, these actions would reduce soil compaction, soil erosion, and surface runoff, which would protect water resources and maintain or improve water quality.

Impacts from Vegetation

Under Alternative N, vegetation treatments would be conducted in accordance with the *Fundamentals of Rangeland Health*, which require that water quality be protected. Initially, vegetation treatments change the vegetation structure and increase local erosion and sedimentation rates, which could adversely affect water quality. However, in the long term, vegetation treatments improve cover and increase plant diversity, thereby stabilizing soil, improving overall watershed function and condition, and allowing greater infiltration and soil moisture storage, which would help protect water quality.

Impacts from Fish and Wildlife

Under Alternative N, proposed decisions that recommend avoiding habitat fragmentation, reducing road densities, and mitigating surface disturbances would benefit water quality by reducing the potential for erosion and sedimentation of streams.

Impacts from Fire and Fuels Management

Alternative N allows for the full range of fire and fuels management actions to achieve ecosystem sustainability. This alternative also allows for treatment of vegetation (including mechanical, wildland fire use or prescribed fire, and chemical methods). This action would move vegetation communities more in line with the historic range of variability. Alternative N would better protect the soil and would increase water quality over the long term as more acres are treated.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness character on those lands outside of WSAs are proposed under Alternative N, resulting in no additional protection for water resources.

Impacts from Forestry and Woodland Products

Under Alternative N, the timber harvest acreage and quantities of woodland products harvested (including fuelwood, fence posts, Christmas trees, and seed collection) would be small, so the overall effects on water quality would be negligible. There are more than 2 million acres of public land in the RFO, with the current average annual harvest of timber near zero board feet and other woodland product permits (averaging about 2 cords each) numbering in the hundreds. Additionally, all permits issued for forest and woodland products contain stipulations for the use of BMPs to minimize or eliminate impacts to all resources, including water.

Impacts from Livestock Grazing

Grazing has the potential to accelerate erosion rates and nutrient loads to surface water. As a result, contaminants such as nutrients and bacteria could wash directly into receiving waters from surface-water runoff in grazed areas. Livestock grazing in areas of low rainfall (less than 8 inches per year) generally does not contribute a significant amount of nutrients to surface water because of the aridity of the area, distance from perennial streams, plant uptake, and soil mineralization.

Livestock grazing in the RFO would be managed in keeping with applicable laws and regulations and with the *Fundamentals of Rangeland Health* and *Standards and Guidelines for Grazing Administration.* Adhering to these statewide standards and guidelines would minimize impacts from livestock grazing by maintaining plant vigor and increasing litter accumulation, resulting in the maintenance or improvement of organic matter content, soil structure, permeability, productivity, and riparian-wetland function. Alternative N would minimize impacts to water resources within the planning area.

Impacts from Recreation

Under Alternative N, the entire RFO (with the exception of Yuba Reservoir, which is managed by the Fillmore FO) is identified and managed as an ERMA. Management of recreation in ERMAs is restricted to custodial actions only, with no special prescriptions identified that would affect water resources. Thus, intensively used recreation sites (such as those near Otter Creek, Big Rock, Factory Butte, and Dirty Devil/Robbers Roost) could experience impacts to water quality from OHV use and use by large numbers of visitors in a limited space. These activities could result in loss of vegetation cover and in soil compaction, leading to increased wind and water erosion. Under Alternative N, these impacts to water resources would continue or might increase as visitor use increases.

Impacts from Travel Management

OHV use has the potential to affect water quality by causing surface disturbance, channeling surface runoff, changing vegetation structure, and reducing riparian-wetland function. Roads and OHV routes can be primary sources of sediment and salinity delivery to rivers and streams. Of special concern are routes with a clay-based native surface and routes and cross-country vehicle use within riparian zones and Mancos shale areas. The magnitude and extent of motorized recreation has a greater impact on soil and water resources than non-motorized recreation does. OHV recreation use during periods of high soil-moisture conditions could accelerate localized erosion and damage vegetation.

Acreage open to cross-country OHV use under Alternative N would be 1,636,400 acres (77% of the RFO). Alternative N would therefore allow the greatest ground disturbance from cross-country OHV use and the greatest potential impacts to water quality from cross-country use. However, actual impacts would be dependent on where and when vehicles traveled. Generally, the more miles of open routes, the greater

the possibility of adverse impacts to water quality, although the location of routes (e.g., crossing streams, within riparian areas) is more important than sheer miles. Stream crossings by motorized vehicles could remove riparian vegetation, increase the amount of bare soil, increase localized soil erosion, change surface hydrology, and reduce infiltration, all of which can impact water quality. Alternative N would designate routes with the greatest number of stream crossings (Table 4-13), thus of all the alternatives, Alternative N would result in the most potential impacts to water resources.

Table 4-13. Off-Highway Route Designations and Stream Crossings

	Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Miles of designated routes	4,315	4,312	4,277	3,192	3,043
Number of stream crossings	539	443	400	273	266

A specific water quality issue raised during scoping was the effect of cross-country OHV use in the Factory Butte area on water quality in the Fremont River. The lower Fremont River was listed on the State of Utah's 303(d) list as impaired for its agricultural beneficial use because of high concentrations of total dissolved solids (TDS). In 2002, a Total Maximum Daily Load (TMDL) plan was approved and the river was removed from the 303(d) list. The water quality goals for the lower Fremont River and tributaries were to reduce salt loading by improving the efficiency of irrigation systems (and thereby reducing return flows), to restore stream channel stability, and to eliminate TDS loading from the two artesian wells in Caineville Wash. BLM capped the two wells in 2004, fulfilling one of the three major goals.

The primary source of TDS in this watershed originates from the saline Mancos shale formation east of Capitol Reef National Park. Water flowing over, through, and under these shale badlands dissolves and transports salts to the Fremont River. Swing Arm City, north of Caineville, is an area of concentrated OHV use within the Mancos shale badlands. Erosion rates usually increase in areas heavily used by OHVs. However, increased erosion does not immediately result in the delivery of eroded solid particles and solutes to a perennial stream, especially in an arid environment. Swing Arm City drains into a broad alluvial fan before reaching the Fremont River. The lower Fremont is not listed as being impaired by sediment or selenium. Water quality standards and criteria adjacent to and downstream of Factory Butte are violated at very low flows when there is no upland runoff. This has persisted for a long period, predating the use of OHVs in the area.

Closing Swing Arm City to OHV use would not result in a significant improvement in downstream water quality. If concentrated OHV use expanded north into Neilson Wash, there would be a greater likelihood of increased sediment loading into the Fremont River because OHVs would impact previously undisturbed areas, increasing the soil erosion potential. Alternative N would allow OHV use to expand into Neilson Wash, possibly impacting water quality.

Impacts from Lands and Realty

Under Alternative N, 280 acres of public land are identified for Federal Land Policy and Management Act (FLPMA) land sales. Loss of these acres would have no effect on water quality. These lands are currently managed to meet state water quality standards as per the SRH. After disposal, use of these lands would be

beyond the control of BLM management, but it is assumed that any development that may occur would be regulated by the State and that state water quality standards would continue to be met.

Withdrawals protect land and other resources from mineral development or appropriation. Existing withdrawals shown in Chapter 3 (154,700 acres) would continue, with an additional 14,780 acres (developed recreation sites) recommended for withdrawal from mineral entry. Withdrawing developed recreation sites from mineral entry would not change water quality, assuming that no locatable mineral resource is located in these areas.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Development of oil and gas resources could affect water quality because of the surface disturbances associated with such development, although the permitting process would require potential impacts to water quality to be mitigated. Alternative N would have the most acres open under standard lease terms and 22,600 more acres than Alternative A closed to surface occupancy. However, mitigation at the time of leasing would preclude significant impacts to water quality. An estimated 8,180 acres would be disturbed over the next 15 years.

Leasable Minerals—Coal

Live water is protected by a buffer of 500 feet. Floodplains, alluvial valley floors, municipal watersheds, and other important water bodies would be protected under the unsuitability criteria. Water resources would be protected by mitigation to stabilize soil, to prevent unnecessary erosion, to revegetate disturbed surfaces, and to disallow any dumping of waste materials that would affect water quality.

Locatable Minerals

Exploration and development of locatable minerals creates surface disturbances that could adversely impact water quality through soil erosion and sedimentation. However, plan of operations-level development would be addressed in site-specific environmental analysis, and notice-level activity would be regulated to prevent undue and unnecessary degradation. Withdrawals (discussed under Impacts from Lands and Realty) would reduce the amount of land open to disturbance.

Salable Minerals

Proposed operations for salable minerals would be subject to a 500-foot buffer for live water. Water resources would be protected by mitigation to stabilize soil, to prevent unnecessary erosion, to revegetate disturbed surfaces, and to disallow any dumping of waste materials that would affect water quality.

Impacts from Special Designations

Wilderness Study Areas

Managing WSAs under non-impairment standards would prevent most ground-disturbing activities. This prevention would result in protection for water resources.

Wild and Scenic Rivers

Protecting the outstandingly remarkable values of the eligible WSRs would help protect water quality by preventing ground-disturbing activities in the river corridors. All eligible segments (12 segments—135 miles) would be protected under Alternative N, thus helping to protect water quality on those rivers.

Areas of Critical Environmental Concern

Protecting the relevant and important values of the potential ACECs would maintain or improve water quality in areas in which management prescriptions limit surface disturbance. In Alternative N, there are four existing ACECs comprising 14,780 acres. Protection for the relevant and important values includes travel restrictions (closed to OHV), recommended for withdrawal from mineral entry, unavailable for livestock grazing, and managed as open to leasing subject to major constraints NSO. These restrictions on surface-disturbing activities would provide protection for water resources in these areas.

Alternative A

Impacts from Soil Resources and Water Resources

Impacts would be similar to those described for Alternative N except that the buffer zone for no surface disturbance or surface occupancy around all springs, to protect water quality, would be 330 feet (rather than 500 feet). Thus, the protected area would be less (8 acres around all springs in Alternative A versus 18 acres in Alternative N), although the area immediately surrounding the springs would still be protected.

Impacts from Vegetation

Impacts would be the same as those described under Alternative N.

Impacts from Fish and Wildlife

Impacts would be the same as those described under Alternative N.

Impacts from Fire and Fuels Management

Under Alternative A, appropriate management response (AMR) would be implemented (as in Alternative N), but fewer acres would be treated. Over time, vegetation communities would be less in line with the historic range of variability, resulting in a reduced level of protection for soil and in reduced water quality. Hazardous-fuels reductions projects could have short-term adverse impacts on water quality. Depending on the timing and intensity of rainfall, increased runoff and soil erosion might originate from treated areas. However, in the long term, prescribed fire and other fuel treatments have been shown to decrease runoff and erosion through the rejuvenation of native grasses. The potential short-term impacts of prescribed fire and other fire treatments can be minimized by limiting their use on steep slopes and near riparian areas.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness character on those lands outside of WSAs are proposed under Alternative A, resulting in no additional protection for water resources.

Impacts from Forestry and Woodland Products

Alternative A allows for harvesting of forest and woodland products across most of the RFO (all areas, outside of WSAs) where sustainable and compatible with restoring, maintaining, or improving forest health. Harvest of commercial and non-commercial forest and woodland products based on sustainability and compatibility with forest and woodland health would have no impact on water quality. Permitted activities under Alternative A would incorporate BMPs into the stipulations, to minimize or totally eliminate any created impacts. These stipulations have been developed over time by using site-specific experience. The stipulations, coupled with the projected limited amount of activity in the forestry and woodland program in the RFO, would support the determination of no impact to water resources.

Impacts from Livestock Grazing

Impacts to water resources would be similar to those described under Alternative N, except that an additional 36,950 acres would be available to livestock grazing under Alternative A. However, because livestock grazing within the RFO would be managed in keeping with applicable laws and regulations, with the *Fundamentals of Rangeland Health* and *Standards and Guidelines for Grazing Administration,* and with BLM's riparian policy, impacts to water resources from livestock grazing would be minimal.

Impacts from Recreation

Recreational activities can have site-specific impacts to water quality because of surface-water runoff near frequent and high-use areas such as campgrounds, parking lots, trailheads, and other recreation-related use areas. There are five SRMAs proposed for Alternative A, comprising 516,500 acres. Limiting OHV use in the Otter Creek Reservoir SRMA to designated routes would maintain existing soil, water, and riparian resource conditions by concentrating impacts to already disturbed areas and reducing the extent of soil compaction. Maintaining the existing condition of riparian-wetland areas would reduce soil erosion. Reducing the extent of soil compaction would indirectly maintain existing infiltration and soil-water distribution patterns, reducing sedimentation into surface waters.

The construction of recreation facilities in the Big Rock SRMA could have localized adverse impacts from removal of vegetation in those areas; long-term impacts would be beneficial by concentrating use areas and thus limiting the extent of vegetation disturbance. Managing the Dirty Devil/Robbers Roost SRMA (290,000 acres) for primitive and semi-primitive recreation would indirectly maintain or reduce the potential for vegetation disturbance from recreation. Limiting OHV recreation use in the Dirty Devil/Robbers Roost SRMA to designated routes would reduce potential surface disturbance and localized removal of vegetation. Managing the Sahara Sands SRMA (12,300 acres) for a roaded natural recreational opportunity and the development of facilities would have site-specific impacts, including soil compaction, changes in surface hydrology, and increased runoff. Managing the Factory Butte SRMA (199,700 acres) for a motorized recreational opportunity and allowing moderate-to-extensive landscape modification would have potentially major impacts on water resources by eliminating vegetation or altering plant communities (reducing species diversity or increasing the potential for introduction and spread of invasive species) over a relatively large area.

Impacts from Travel Management

The types of impacts experienced as a result of travel management would be similar to those described under Alternative N. However, Alternative A designates 449,000 acres (21% of the RFO) as open to motorized vehicle use; motor vehicles would be limited to designated routes on 1,679,000 acres. Actual impacts would depend on where and when vehicles traveled. Alternative A would designate approximately the same miles of routes but with 22% fewer stream crossings (443, compared to 539 under Alternative N). Thus, Alternative A should have less adverse impacts on water quality.

Impacts from Lands and Realty

Under Alternative A, 13,400 acres of public land are identified as available for FLPMA Section 203 sales (the same as under the Proposed RMP). Loss of these acres would have no effect on water quality—these lands are currently managed to meet state water quality standards as per the *Standards and Guidelines for Grazing Administration.* After disposal, use of these lands would be beyond the control of BLM management, but it is assumed that any development that may occur would be regulated by the State, and that state water quality standards would continue to be met.

Land withdrawals protect land and other resources from mineral development or appropriation. Alternative A proposes no new withdrawals (only the 154,700 acres currently withdrawn). Exploration and development of locatable minerals creates surface disturbances that could adversely impact water

quality through soil erosion and sedimentation. Because Alternative A would include the fewest acres withdrawn from mineral entry, impacts to water resources would be expected to be the greatest under Alternative A.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Development of oil and gas resources could affect water quality because of the surface disturbances associated with such development, although the permitting process would require potential impacts to water quality to be mitigated. Alternative A would have 375,900 fewer acres than Alternative N open under standard lease terms and the fewest amount of acres closed to surface occupancy. However, mitigation at the time of leasing would preclude significant impacts to water quality. Over the next 15 years, an estimated 8,180 acres would be disturbed.

Leasable Minerals—Coal

Impacts to water resources are the same as under Alternative N, except the buffer around live water and springs would be 330 feet.

Locatable Minerals

Exploration and development of locatable minerals creates surface disturbances that could adversely impact water quality through soil erosion and sedimentation. However, plan of operations-level development would be addressed in site-specific environmental analysis, and notice-level activity would be regulated to prevent undue and unnecessary degradation. Withdrawals (discussed under Impacts from Lands and Realty) would reduce the amount of land open to disturbance.

Salable Minerals

Proposed operations for salable minerals are subject to the oil and gas leasing restrictions. Live water and springs would be protected by a buffer of 330 feet, subject to an appropriate exception when there are no practical alternatives and impacts can be fully mitigated. Water resources would be protected by mitigation to stabilize soil, to prevent unnecessary erosion, to revegetate disturbed surfaces, and to disallow any dumping of waste materials that would affect water quality.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Protecting the outstandingly remarkable values of the eligible WSRs would help protect water quality by preventing ground-disturbing activities in the river corridors. No eligible segments would be recommended as suitable under Alternative A, resulting in no additional protection for water resources. However, most of the eligible river segments (98 of the 135 total miles) are also within WSAs, which would provide protection for water resources because of lack of surface-disturbing activities within WSAs.

Areas of Critical Environmental Concern

Protecting the relevant and important values of the potential ACECs would maintain or improve water quality in areas in which management prescriptions limit surface disturbance. In Alternative A, there are no potential ACECs, and the four existing ACECs (comprising 14,780 acres of land) would be eliminated. Thus, there would be no protection of relevant and important values from irreparable damage

in these areas possibly posing a threat to water resources from various surface-disturbing activities such as open OHV use and mineral development.

Proposed RMP

Impacts from Soil Resources and Water Resources

Impacts would be the same as those described under Alternative A.

Impacts from Vegetation

Impacts would be the same as those described under Alternative N.

Impacts from Fish and Wildlife

Impacts would be the same as those described under Alternative N.

Impacts from Fire and Fuels Management

Impacts would be similar to those described under Alternative A, except that more acres would potentially be treated, moving vegetation communities more in line with the historic range of variability which would better protect soil resources and increase water quality.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under the Proposed RMP, 78,600 acres would be managed to maintain wilderness characteristics. Management actions to achieve this objective include designating the area as closed to leasing or open to leasing subject to major constraints (NSO) for oil and gas leasing; limiting motorized uses to designated routes; and designating as VRM Class II. The emphasis on naturalness and a lack of surface-disturbing activities within these areas would minimize impacts to water quality from surface-disturbing activities (such as stream crossings by OHVs and vegetation removal, which could lead to erosion).

Impacts from Forestry and Woodland Products

Impacts would be similar to those described under Alternative A, except that more lands would be closed to this type of use under the Proposed RMP (one WSR segment—5 miles, compared to zero segments under Alternative A, and the Old Woman Front ACEC—330 acres). Areas in which forest and woodland products harvest would occur would incorporate BMPs into permit stipulations to minimize or eliminate any impacts to water resources.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

The types of impacts to water quality would be similar to those described for Alternative A except that the Proposed RMP proposes five SRMAs comprising 860,390 acres. Recreation activities on these five SRMAs include motorized activities at Big Rocks and Factory Butte, which are open OHV areas (8,590 acres). The rest of the area varies from semi-primitive motorized to primitive recreation, with many protective measures for coincident WSA, WSR, and ACEC areas. Impacts from recreation management actions are considered negligible for the Proposed RMP and would not affect water quality beyond the natural "background" level of contaminants from erosion and runoff.

Impacts from Travel Management

The types of impacts experienced as a result of travel management would be similar to those described under Alternative N. However, the Proposed RMP designates only 9,890 acres (less than 1% of the RFO) open to cross-country OHV use. The Proposed RMP closes 209,900 acres and limits motorized use to

designated routes on 1,908,210 acres. Routes designated under this alternative would include 400 stream crossings—fewer than under Alternative N or A but more than under Alternative C or D.

Impacts from Lands and Realty

Under the Proposed RMP, 13,400 acres of public land are identified as available for FLPMA Section 203 sales. As described under Alternative A, loss of these acres would have no effect on water quality.

Land withdrawals protect land and other resources from mineral development. The Proposed RMP proposes 21,500 acres of new withdrawals and continuation of existing withdrawals (154,700 acres). Exploration and development of locatable minerals creates surface disturbances that could adversely impact water quality through soil erosion and sedimentation. Thus, withdrawing these lands from mineral entry could slightly reduce the potential impacts to water resources, compared with Alternatives N and A.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Development of oil and gas resources could affect water quality because of the surface disturbances associated with such development, although the permitting process would require potential impacts to water quality to be mitigated. The Proposed RMP would have 608,700 acres open to leasing subject to the standard terms and conditions and 154,500 acres open to leasing subject to major considerations (NSO), whereas Alternative A has 0 acres open to leasing subject to major constraints (NSO) and Alternative N has 22,600 acres closed to surface occupancy. However, mitigation at the time of leasing would preclude significant impacts to water quality. Over the next 15 years, an estimated 8,180 acres would be disturbed.

Leasable Minerals—Coal

Impacts would be the same as those described under Alternative A.

Locatable Minerals

Exploration and development of locatable minerals creates surface disturbances that could adversely impact water quality through soil erosion and sedimentation. However, plan of operations-level development would be addressed in site-specific environmental analysis, and notice-level activity would be regulated to prevent undue and unnecessary degradation. Withdrawals (discussed under Impacts from Lands and Realty) would reduce the amount of land open to disturbance, thereby helping to protect water resources.

Salable Minerals

Impacts would be the same as those described under Alternative A.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Under the Proposed RMP, one segment with a tentative classification of Wild (the Fremont Gorge—5 miles) would be recommended as suitable. This would serve to protect water quality on that river segment. Protecting the outstandingly remarkable values of this WSR would help protect water quality by preventing ground-disturbing activities in the river corridors. Of the remaining segments, 98 miles are within WSAs, leaving 32 miles on which ground-disturbing activities could potentially impact water

resources. The Proposed RMP would provide less protection to water resources from WSR decisions than under Alternative N, C, or D but more than under Alternative A.

Areas of Critical Environmental Concern

Protecting the relevant and important values of the potential ACECs could improve water quality in areas in which management prescriptions limit surface disturbance. Under the Proposed RMP, two ACECS (2,530 acres) would be designated. Protection of the relevant and important values would include actions such as travel restrictions (closed to OHV), recommending for withdrawal from mineral entry, making the ACECs unavailable for livestock grazing, and managing them as open to leasing subject to major constraints (NSO). These restrictions on surface-disturbing activities would provide protection for water resources in these areas.

Alternative C

Impacts from Soil Resources and Water Resources

Impacts would be the same as those described under Alternative A.

Impacts from Vegetation

Impacts would be the same as those described under Alternative N.

Impacts from Fish and Wildlife

Impacts would be the same as those described under Alternative N.

Impacts from Fire and Fuels Management

Impacts would be similar to those described under Alternative A, except that fewer acres would be treated.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness character on those lands outside of WSAs are proposed under Alternative C, resulting in no additional protection for water resources.

Impacts from Forestry and Woodland Products

Impacts would be similar to those described under the Proposed RMP, except that more lands would be closed to this type of use under Alternative C (12 WSR segments—135 miles, compared to 0 segments under Alternative A). Areas in which forest and woodland products harvest would occur would incorporate BMPs into permit stipulations to minimize or eliminate any impacts to water resources.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

Recreational activities can have site-specific impacts to water quality because of surface water runoff near frequent and high-use areas such as campgrounds, parking lots, trailheads, and other recreation-related use areas. There are four SRMAs (comprising 930,000 acres) proposed for Alternative C. Recreation activities on these four SRMAs include dispersed recreation, emphasizing semi-primitive to primitive recreation activities as opposed to motorized activities. These areas have many coincident protective measures for overlapping WSA, WSR, and ACEC areas. Impacts from recreation management actions are considered negligible and would not affect water quality beyond the natural “background” level of contaminants from erosion and runoff.

Impacts from Travel Management

The types of impacts experienced as a result of travel management would be similar to those described under Alternative N, except that Alternative C designates no areas as open to cross-country OHV use, designates 683,000 acres as closed to OHV use, and designates 1,445,000 acres in which motorized use would be limited to designated routes. Routes designated under Alternative C would include 273 stream crossings—fewer than Alternative N, A, or the Proposed RMP but slightly more than Alternative D.

Impacts from Lands and Realty

Under Alternative C, no lands are identified for FLPMA Section 203 sales. This would result in the continuation of management of water quality on all federal lands to meet state water quality standards as per the *Standards and Guidelines for Grazing Administration.*

Alternative C also recommends withdrawing 331,100 acres from mineral entry. Potential surface disturbance caused by mineral entry would therefore be reduced over Alternatives N, A, and the Proposed RMP, thus providing protection for water resources by minimizing erosion and sedimentation to surface waters.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Development of oil and gas resources could affect water quality because of the surface disturbances associated with such development, although the permitting process would require mitigation of potential impacts to water quality. Alternative C would designate 491,900 acres as open to leasing subject to standard terms conditions and 148,700 acres as open to leasing subject to major constraints (NSO);Alternatives A and N would designate 0 acres and 22,600 acres, respectively, as closed to surface occupancy. However, mitigation at the time of leasing would preclude significant impacts to water quality. Over the next 15 years, an estimated 8,180 acres would be disturbed.

Leasable Minerals—Coal

Impacts would be the same as those described under Alternative N, except that the buffer for live water and springs would be 660 feet.

Locatable Minerals

Exploration and development of locatable minerals creates surface disturbances that could adversely impact water quality through soil erosion and sedimentation. However, plan of operations-level development would be addressed in site-specific environmental analysis while notice level activity would be regulated to prevent undue and unnecessary degradation. Withdrawals (discussed under Impacts from Lands and Realty) would reduce the amount of land open to disturbance.

Salable Minerals

Impacts would be the same as those described under Alternative A, except that the buffer for live water and springs would be 660 feet.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Protecting the outstandingly remarkable values of the eligible WSRs would help protect water quality by preventing ground-disturbing activities in the river corridors. All 12 eligible segments (135 miles) would be protected under Alternative C, resulting in protection for water resources.

Areas of Critical Environmental Concern

Protecting the relevant and important values of the potential ACECs would maintain or improve water quality in areas in which management prescriptions limit surface disturbance. In Alternative C, 16 ACECs (886,810 acres) would be designated. Associated management of these ACECs to protect relevant and important values would include restricting travel (closed to OHV use), recommending the ACECs for withdrawal from mineral entry, making the ACECs unavailable for livestock grazing, and managing the ACECs as open to leasing subject to major constraints (NSO). Alternative C (along with Alternative D) would provide the most protection for water quality because of ACEC designations.

Alternative D

Impacts from Soil Resources and Water Resources

Impacts would be the same as those described under Alternative A.

Impacts from Vegetation

Impacts would be the same as those described under Alternative N.

Impacts from Fish and Wildlife

Impacts would be the same as those described under Alternative N.

Impacts from Fire and Fuels Management

Impacts would be similar to those described under Alternative A, except that fewer acres would be treated.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under Alternative D, 682,600 acres would be managed to maintain wilderness characteristics. Management actions to achieve this objective include closing to oil and gas leasing, closing to OHV use, and designating as VRM Class I. The emphasis on naturalness and a lack of surface-disturbing activities within these areas would minimize impacts to water quality from surface disturbing activities (such as stream crossings with OHVs and vegetation removal, which could lead to erosion). Of all the alternatives, Alternative D would therefore be most beneficial to water quality.

Impacts from Forestry and Woodland Products

Impacts would be the same as those described under Alternative C, except that no harvest would be allowed on lands with wilderness character. Areas in which forest and woodland products harvest would occur would incorporate BMPs into permit stipulations to minimize or eliminate any impacts to water resources.

Impacts from Livestock Grazing

Impacts would the same as those described under Alternative A.

Impacts from Recreation

Under Alternative D, seven SRMAs (1,358,100 acres) would be established. Recreation activities on these SRMAs include dispersed recreation, emphasizing semi-primitive to primitive recreation activities

as opposed to motorized activities. These areas have many coincident protective measures for overlapping WSA, WSR, and ACEC areas. Impacts from recreation management actions are considered negligible and would not affect water quality beyond the natural "background" level of contaminants from erosion and runoff.

Impacts from Travel Management

The types of impacts from travel management would be similar to those described under Alternative C—there are no open OHV areas under Alternative D. However, the amount of acres closed to OHV use (1,155,200) is the largest of all alternatives. Therefore, of all the alternatives, Alternative D would have the least impacts on water resources from travel management.

Impacts from Lands and Realty

Impacts from FLPMA land sales would be the same as those described under Alternative C.

The types of impacts would be similar to those described under Alternative N, except that Alternative D recommends substantially more acres (903,900 acres, or 42% of the RFO) for withdrawal from mineral entry. As a result, potential surface disturbance caused by mineral entry (and associated impacts to water resources) would be greatly reduced, compared to the other alternatives.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Development of oil and gas resources could affect water quality because of the surface disturbances associated with such development, although the permitting process would require mitigation of potential impacts to water quality. Alternative D would designate 290,200 acres as open to leasing subject to standard terms and conditions and 43,300 acres as open to leasing subject to major constraints (NSO); Alternatives A and N would designate 0 acres and 22,600 acres, respectively, as open to leasing subject to major constraints (NSO). However, mitigation at the time of leasing would preclude significant impacts to water quality. During the next 15 years, an estimated 8,180 acres would be disturbed.

Leasable Minerals—Coal

Impacts would be the same as those described under Alternative C.

Locatable Minerals

Exploration and development of locatable minerals creates surface disturbances that could adversely impact water quality through soil erosion and sedimentation. However, plan of operations-level development would be addressed in site-specific environmental analysis, and notice-level activity would be regulated to prevent undue and unnecessary degradation. Withdrawals (discussed under Impacts from Lands and Realty) would reduce the amount of land open to disturbance.

Salable Minerals

Impacts would be the same as those described under Alternative C.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Impacts would be the same as those described under Alternative C.

Areas of Critical Environmental Concern

Impacts would be the same as those described under Alternative C.

4.3.4 Vegetation

This analysis addresses the potential impacts to vegetation resources as described in Chapter 3—including desert shrub, sagebrush steppe, forests and woodlands, riparian resources, and invasive nonnative species—that could result from implementing the management actions under the alternatives described in Chapter 2. Vegetation is a fundamental and vitally important component of the biological resources in the RFO. The effects on vegetation that result from implementing any of the alternatives under consideration would also affect other resources. Impacts to the vegetation resource could result in reduced biological productivity, weed invasion, and unwanted changes in the composition, function, and structure of vegetation communities. These changes, in turn, could influence forage availability for wildlife and livestock. Where actions result in loss or reduction of vegetative cover or soil erosion or compaction, archaeological, paleontological, historic, wildlife, water, soil, and air resources could be impacted.

The effects of management actions on vegetative communities may vary, depending on a variety of factors such as the type of soils, moisture, topography, and plant reproductive characteristics. Impacts on vegetation resources also vary depending on the seral stage and composition of vegetation communities, as discussed in Chapter 3. The composition of a plant community changes over time as a result of interactions with factors such as climate, resource uses, and disturbance. Surface disturbance can result in the most immediate direct impact to an area, by removing existing vegetation and increasing opportunities for establishment of noxious weeds and invasive species. This could in turn reduce vegetation diversity, production, desirable plant cover, and overall ecological health of vegetation communities. Decreased ecological health would make vegetation communities less resilient to disease, drought, fire, invasive species, and other natural disturbances and stressors. Indirectly, surface disturbance could increase erosion rates, modify soil composition, and alter water flow patterns across the landscape. On the contrary, implementing vegetation treatments (mechanical, fire, biological, and chemical), managing vegetation and ecological resources to meet desired vegetation conditions, and limiting or restricting surface disturbances could serve to generally improve vegetation and ecological conditions. Although short-term losses of vegetation cover would occur, over the long term these actions would help remove undesirable species, increase species and age class diversity, improve vegetation composition and structure, and increase vegetation cover and improve ecological conditions. This would result in healthier vegetation communities that are more capable of retaining moisture and nutrients and of resisting disease, invasive species, drought, and other natural disturbances and stressors.

Methods and Assumptions

This analysis was based on the following assumptions:

- Adequate vegetative ground cover and species composition for site stabilization could typically occur within 5 to 10 years in sagebrush/grass communities depending on climate, soil, and site potential.
- Plant communities would be managed toward achieving a mix of species composition, cover, and age classes.
- The degree of impact attributed to any one disturbance or series of disturbances would be influenced by several factors, including location within the watershed; the type, time and degree of disturbance; existing vegetation; and precipitation.
- Noxious and invasive weeds would continue to try to invade and spread as a result of surface disturbing activities, vehicle traffic, recreational activities, wildlife and livestock grazing, and natural causes.
- Weed and pest control would be carried out in coordination with the appropriate county, public, and private interests.

- Climatic fluctuation would continue to influence the health and productivity of plant communities on an annual basis.
- Table 2-11a establishes estimated annual vegetation treatment acres for Alternatives A through D, to achieve the overall treatment acres for those alternatives over the life of the plan. Actual annual treatment acreage would vary depending on conditions, staffing, and similar factors. These acreage figures include all vegetation and fire and fuels treatments.

The analysis of vegetation, which includes structure, productivity, vigor, percent cover, density, and species composition, was based on likely changes relative to movement toward or away from desired vegetation conditions. In the absence of quantitative data, professional judgment was used, and impacts are sometimes described using ranges of potential impacts or in qualitative terms, if appropriate. Particular focus was placed on vegetation communities with the greatest sensitivity to changes in structure and species composition and at the most risk from potentially severe mortality events such as drought, insects, and disease infestation.

Environmental Consequences

Impacts to vegetation would likely result from actions proposed under the following resource management programs:

- Soil Resources
- Vegetation and Fire and Fuels Management
- Visual Resources
- Special Status Species
- Fish and Wildlife
- Wild Horses and Burros
- Non-WSA Lands with Wilderness Characteristics
- Forestry and Woodland Products
- Livestock Grazing
- Recreation
- Travel Management
- Lands and Realty
- Minerals and Energy
- Special Designations

Other programs were determined to have little or no impact on vegetation.

Alternative N: No Action

Impacts from Soil Resources

Implementing BMPs to minimize detrimental impacts to soils and water quality from ground-disturbing activities and maintaining or enhancing riparian areas through project design features or stipulations would help to reduce soil erosion, surface runoff, and sedimentation of streams. This reduction would help to maintain or improve upland vegetation and riparian and wetland communities. Making necessary management adjustments to meet watershed and riparian objectives (e.g., *Standards and Guidelines for Grazing Administration* and Utah BLM Riparian Management Policy) would reduce the potential for impacts on creeks, springs, and riparian areas associated with trampling and removal of understory vegetation, thus generally maintaining or improving riparian conditions as well as upland vegetation and wetlands.

Impacts from Vegetation and Fire and Fuels Management

Restoration and Vegetation Treatments

Impacts would vary by the method used to accomplish the treatment, whether manual, mechanical, chemical, biological, or fire. Vegetation treatments are designed to move plant communities towards desired conditions. Not implementing these treatments would inhibit or prevent attainment of ecological objectives and desired conditions for desert shrub, sagebrush steppe, forest and woodland, and riparian communities. Where fuel loads are excessive, failure to conduct vegetation treatments could increase the risk of catastrophic fire, which would put tens of thousands of acres at risk of vegetation loss and would impair riparian-wetland functioning condition. Catastrophic fire would also cause major, long-term indirect impacts in terms of wildlife habitat loss and long-term or permanent reduction in biomass productivity from erosion.

Vegetation treatments are designed to change vegetative composition and diversity from one state to another. As a result, most treatment methods initially remove some or all of the surface vegetation. This removal results in reduction of ground cover and increased erosion. Depending upon the method used, there may also be varying levels of surface disturbance, particularly when mechanical treatment methods are used. Because seeding success is greatest when seeds are covered by soil and protected from erosion and when moisture is held, treatment methods that disturb soils often have higher success rates compared to those methods that do not disturb soils. Successful treatments would increase ground cover and vegetative diversity, providing soil stability, reducing soil surface temperatures, increasing water-holding capability, and increasing food and cover for wildlife. These increases would improve the ecological health of desert shrub, sagebrush steppe, and forests and woodlands and would increase riparian-wetland functioning condition in treated areas.

The greatest level of environmental impact occurs when a vegetation treatment fails. A vegetation treatment is considered a failure when the existing vegetation is not removed or the target vegetative community does not become established. When the existing vegetation remains at the site, the environmental consequences to soil are minimal. However, when the treatment is successful in removing existing vegetation but the desired future vegetative community does not become established, a variety of consequences can result. In such cases, mechanical and other surface-disturbing treatment methods can lead to increased erosion because effective ground cover would be greatly reduced. Increased invasion of noxious weeds and other exotic weed species, decreased water availability, and long-term changes in habitat and species composition could occur. The duration of these effects would vary by treatment method, habitat and community type, availability of appropriate seed, and amount and timing of precipitation. Most such failed treatments would eventually be revegetated by either the former plant community or by some new and perhaps less-desirable community.

Because of the dynamic nature of vegetative communities, even those areas in which seedings are unsuccessful would eventually become filled in with vegetation. Treatment areas change over time as vegetation is re-established. Some areas treated early in the planning cycle would become completely re-vegetated and could conceivably require treatment maintenance prior to the next planning cycle. Failed treatments would not be considered permanently “lost” from the system unless the site became re-established with a highly stable, non-target plant community. Treatment methods that proved to be unsuccessful at achieving the desired results would be modified or discontinued. Because most treatments require at least two growing seasons to determine success, it is unlikely that unsuccessful methods would be used for more than 2 consecutive years. As a result, the potential for failed treatments to occur on the maximum number of acres available for treatment is considered negligible. Use of adaptive management should reduce or eliminate the potential for permanent loss of desired vegetation communities from treatments.

Manual Vegetation Treatments

Compared to other methods, manual treatments would have minimal effects to sensitive vegetative communities because these treatments would avoid destruction of non-target species and therefore would result in a lower likelihood of erosion, soil instability, sedimentation, or increased surface temperatures.

Mechanical Vegetation Treatments

Use of mechanical tools in most sites would reduce canopy cover, increase diversity of understory vegetation, increase soil moisture (because of a reduction of evapotranspiration), and change vegetation type. These impacts would be direct, would be both short- and long-term, and would positively affect some species while adversely affecting others. Creeks, springs, and riparian areas could be adversely affected from the increased run-off and erosion in the short-term until vegetation reestablishes. Long-term, indirect impacts would result from changes in habitat type, which in turn would result from the changes in vegetation density, canopy cover, structure, and the protection and maintenance of vegetation communities. Mechanical treatment methods could also result in localized, short-term impacts to air quality from fugitive dust, equipment emission and exhaust, and chemical fumes, which could lead to reduced plant vigor and fitness or to mortality among individuals or species.

Biological Vegetation Treatments

Target species would experience direct, short-term impacts caused by biological vegetation treatments. Depending upon the biological control agent, a variety of other direct and indirect effects could occur, including mortality of non-target species. As with other vegetation treatment methods, indirect effects would include reduced soil infiltration, increased erosion and sedimentation, increased soil surface temperatures, and short- or long-term changes in species composition or community structure. Creeks, springs, and riparian areas could be adversely affected from the increased run-off and erosion in the short term, until vegetation re-establishes.

Chemical Vegetation Treatments

Target and some non-target species would experience direct, short-term impacts, depending upon the chemical used and the application rate. Indirect effects would include reduced soil infiltration, increased erosion and sedimentation, increased soil surface temperatures, and short- or long-term changes in species composition or community structure. Creeks, springs, and riparian areas could be adversely affected from the increased run-off and erosion in the short term, until vegetation reestablishes. Direct and indirect effects from the use and application of specific chemicals are described in detail in the Final EIS for Vegetation Treatment on BLM Lands in Thirteen Western States (BLM 1991a), as well as the draft revision of the document (BLM 2005).

Prescribed Fire, Fire Use, and Management

The intensity of impacts from prescribed fire and fire use would depend on the size and severity of the fire, as well as the fuel type and quantity. Impacts from fires that cause injury or loss of individual plants and an increase in soil moisture caused by the reduction of evapotranspiration would be short-term and minor. Impacts from fires that change species composition, plant density, and vegetative structure and that increase the abundance of non-native invasive, fire-adapted plant species would be direct, major, and both short- and long-term. Reduced biomass productivity caused by accelerated erosion resulting from the reduction in effective ground cover, as well as reduced habitat suitability for seed dispersers, would represent indirect, major impacts. Creeks, springs, and riparian areas could be adversely affected from the increased run-off and erosion in the short term, until vegetation reestablishes. However, these projects are designed to minimize erosion and increase habitat suitability. If these major impacts cannot be mitigated, the project would not be approved or implemented.

Fire Suppression

Direct impacts from the removal of vegetation from hand-line construction would be short-term and minor. Impacts from using aerially-applied retardant as an alternative to hand-line construction would be negligible. Most impacts from fire suppression activities would be minor, short-term, and localized, particularly if activities in sensitive habitats are mitigated or avoided. Impacts in the arid desert-scrub communities could be longer term because these vegetation communities do not recover as readily.

Control of Noxious Weeds and Invasive Species

Impacts depend upon the method used. Alternative N would allow a full range of treatments for controlling noxious weeds and would help ensure a high degree of success. Direct impacts to the target species from manual techniques and herbicide applications would range from minor to moderate, with some non-targets experiencing impacts in the short term. Eradication of noxious weeds and invasive species and improved species composition for the remaining community would occur over the long term. Controlling noxious and invasive species would also benefit riparian habitat by reducing competition with native species and by allowing natural ecosystems to reestablish.

Collection and Use of Native Seed/Use of Non-native Plants

Under Alternative N, collection and use of native seed could be authorized with a permit. Collection of native seed could result in localized, minor short-term impacts to vegetation from trampling, loss of individuals, reduction in seed availability at the collection site, and potential reduction in plant vigor. The availability of local native seed would result in moderate indirect long-term impacts, which include improved ability to achieve desired conditions by improving the species composition in areas needing vegetation treatments.

Assuming that the criteria described in Chapter 2 are met, non-native plant species could be used in treatment or restoration efforts. The major short-term direct impact from the use of nonnative plant species is the stabilization of soils following disturbance when native species are ineffective, cannot be established, or are unavailable. The major short- and long-term indirect impacts from use of non-native plant species for re-seeding would be an undesirable change in species composition, resulting from introducing species that could out-compete natives or increase the frequency or intensity of wildfire.

Impacts from Visual Resources

Implementing VRM guidelines would increase the difficulty of accomplishing vegetation management actions and would limit the extent and effectiveness of the restoration efforts. Vegetation treatment projects would generally not occur in VRM Class I areas; however, under Alternative N, none of the lands managed by the RFO are classified as VRM Class I. Vegetation treatment, restoration, and weed treatment projects on 529,500 acres (25% of the RFO) within VRM Class II areas could be redesigned, moved, or otherwise restricted. The lack of vegetation treatments could result in increased vegetation density, increased density of late seral succession vegetation, and increased establishment of noxious and invasive species in VRM Class I and II areas. These increases could lead to lead to significant loss of unique vegetation characteristics, reduce resistance to disease and insect pest infestations, and increase the risk of uncharacteristically large or intense wildfires. Decreased ecological health of vegetation communities and riparian-wetland function could result. Managing for VRM Classes III and IV would allow the greatest flexibility for vegetation treatments. Because 569,000 acres would be managed as VRM Class III and 1,029,500 acres would be managed as Class IV, there would be various locations in which proposed projects could be relocated. These projects could assist in achieving desired conditions. See the discussion of restoration and vegetation treatments in the Impacts from Vegetation and Fire and Fuels Management section for a discussion of impacts.

Impacts from Special Status Species

Alternative N (along with all the other alternatives) prohibits actions that destroy, adversely modify, or fragment federally listed species habitat; proposes habitat improvements for SSS; and considers SSS habitat in all wildland fire suppression efforts. Restrictions on vegetation treatments in SSS habitats would reduce or eliminate potential impacts to vegetation from treatment projects. Impacts would vary according to the type of treatment proposed and the nature and extent of the restrictions. Failure to implement vegetation treatments, especially treatments to control noxious weeds, in these habitats could result in direct and indirect long-term impacts to vegetation. The lack of vegetation treatments could result in increased vegetation density, increased density of late seral succession vegetation, and increased establishment of noxious and invasive species in SSS habitats. This could lead to significant loss of unique vegetation characteristics, reduce resistance to disease and insect pest infestations, and increase the risk of uncharacteristically large or intense wildfires. Decreased ecological health of vegetation communities and riparian-wetland function could result.

Restricting authorized uses for SSS would reduce or eliminate disturbances that would otherwise have affected vegetation. All these actions would benefit vegetation by helping to maintain vegetation communities and riparian-wetland functioning condition.

Impacts from Fish and Wildlife

Proposed decisions for fish and wildlife management, such as avoiding habitat fragmentation, reducing road densities, and restricting surface disturbance or surface occupancy within 500 feet of riparian areas in the Cedar/Beaver/Garfield/Antimony Proposed RMP area and within 330 feet of riparian areas throughout the remainder of the RFO would reduce or eliminate potential impacts to desert shrub, sagebrush steppe, forest and woodland, and riparian communities. Closing routes would reduce introduction of noxious and invasive species, increase plant vigor, and reduce plant mortality associated with dust generation alongside the road. Compaction would also be eliminated along the closed route, which would increase infiltration and reduce erosion, thereby improving vegetative cover and riparian-wetland functioning condition.

Alternative N proposes habitat treatments to meet terrestrial, aquatic, and riparian habitat objectives. Implementation of these vegetation treatments would involve removing individual plants and altering species composition and vegetation structure. Impacts would vary according to the treatment method used (see Impacts from Vegetation Resources) and would initially change the vegetation structure and increase local erosion and sedimentation rates. However, in the long term, vegetation treatments would improve cover and increase plant diversity, thereby stabilizing soil, improving overall watershed and riparian function and condition, and allowing greater infiltration and soil moisture storage. Therefore, impacts to vegetation from proposed decisions for fish and wildlife would be beneficial overall.

Grazing by wildlife can alter vegetation communities and impair riparian-wetland functioning condition by removing portions of plants and seedlings, trampling plants, and compacting soils, and introducing noxious weeds and invasive species. The resulting impacts depend on the extent of the removal, length of grazing period, and climatic conditions. Transplanting big game species would increase the number of grazing animals; however, wildlife tends to disperse across a large area. Thus, impacts from these newly transplanted big game animals should be minor.

Impacts from Wild Horses and Burros

In general, the greater the number of burros, the greater the possibility of adverse impacts on vegetation and riparian-wetland areas because of grazing, trampling, compaction, and reduced vegetation cover. Under Alternative N, 100 AUMs are allocated to burros in the Canyonlands HMA, although no AML is established. These numbers would be the same as under Alternative A but less than under Alternative C

or D or the Proposed RMP (which establish a herd size of between 120 to 200 animals). Thus, impacts to vegetation under Alternative N would be minimal because of the small herd size managed.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs would be proposed under Alternative N, resulting in no additional protection for vegetation.

Impacts from Forestry and Woodland Products

Proposed decisions for managing forest and woodland products, based on the Healthy Forest Restoration Act, would generally improve the structure, composition, health, and vigor of forest and woodland vegetation. Alternative N allows for harvesting of forest and woodland products across most of the RFO (all areas outside of WSAs, on a case-by-case basis). Harvesting of forest and woodland products would have localized, minor-to-moderate, short-term impacts on soils because of vehicle use to access the harvesting site and because of loss of vegetative cover. Indirect effects would include reduced soil infiltration, increased erosion and sedimentation, increased soil surface temperatures, short- or long-term changes in species composition or community structure, and localized impairment of riparian-wetland functioning condition. However, removal of pinyon and juniper trees from areas in which they have invaded or areas in which canopy densities have increased would result in reduced amounts of bare ground and increased litter at the soil surface, improving vegetation cover and riparian-wetland conditions. Because pinyon pine and juniper vigorously compete with other plants for available soil water, their removal allows for regrowth of grasses and shrubs in the understory vegetation and in riparian areas.

Impacts from Livestock Grazing

Livestock grazing can directly affect vegetation communities and riparian-wetland conditions by reducing plant vigor, decreasing or eliminating desirable forage species, increasing soil instability and erosion, reducing water quantity and quality, and causing loss of or injury to individual plants from trampling, particularly near water sources. Impacts would be both short- and long-term and range from minor to major, depending upon the grazing intensity, duration, and season of use, and local climatic conditions. Long-term changes in vegetation may result if livestock use consistently exceeds established allocations or if drought or other environmental factors reduce range-carrying capacity. Improper grazing practices could lead to soil compaction, reduced infiltration rates, increased runoff and erosion, and declined riparian and watershed conditions. Livestock grazing could also increase the opportunity for exotic plant species and noxious weed infestations. Season-of-use adjustments could lessen the effects of grazing, particularly if grazing occurs during the non-growing season.

Under Alternative N, 1,989,048 acres would be available for livestock grazing and 138,952 acres would be unavailable for livestock grazing. Livestock grazing could increase soil compaction in trailing, watering, and mineral-supplement areas and could indirectly impact riparian and wetland areas and riparian functioning condition. However, livestock grazing within the RFO would be managed in keeping with applicable laws and regulations, with the *Fundamentals of Rangeland Health* and *Standards and Guidelines for Grazing Administration,* and with BLM's riparian policy. Adhering to these statewide standards, guidelines, and policy would minimize impacts from livestock grazing by maintaining plant vigor and increasing litter accumulation, resulting in the maintenance or improvement of organic matter content, soil structure, permeability, productivity, and riparian-wetland function. These improvements would ensure that upland soils would exhibit infiltration, permeability, and erosion rates that are appropriate to soil type, climate, and landform and that riparian areas achieve or maintain Proper Functioning Condition (PFC). Impacts therefore would be minor area-wide but potentially moderate in specific areas such as creek, springs, wetland, and riparian areas.

Construction of new range-water developments would permanently remove vegetation within the footprint of the structures. Surrounding vegetation could be damaged temporarily, but would likely recover, except in the immediate vicinity of the development. Water developments concentrate livestock use and reduce or eliminate vegetation in the immediate vicinity and increase compaction and erosion, which would lead to decreased biological productivity. Increased use of the area by livestock would increase foraging pressure on desirable species. This could result in increased or decreased vigor to the plants, depending upon the species and their phenology. Allotment scale impacts from properly planned water developments include better distribution of livestock and wildlife grazing use on the allotment, resulting in overall improvement in range conditions, increased vigor of vegetation, improved cover to soils, improved livestock performance, and reduced operational costs to permit holders. Maintenance of existing water developments would result in minor disturbance impacts to vegetation resources, similar in scope and nature to those described for new developments.

Impacts from Recreation

Recreational activities have site-specific impacts to vegetation and riparian/wetlands areas near frequent and high-use areas such as campgrounds, parking lots, trailheads, and other recreation-related use areas. Long-duration trail use (e.g., walking, equestrian, OHV, mountain biking), especially during wet periods, could result in loss of vegetation cover, could increase erosion, and could decrease the riparian ecological condition. Large group-recreation events and camping could compact soils, which could lead to changes in plant vigor and could increase erosion in riparian areas. These impacts would be site-specific and localized.

Visitor use is expected to increase throughout the RFO. Under Alternative N, the entire RFO (with the exception of Yuba Reservoir, which is managed by the Fillmore FO) is identified and managed as an ERMA. Management of recreation in ERMAs is restricted to custodial actions only, with no special prescriptions identified that would limit or control recreational activities. Thus, intensively used recreation sites (such as those near Otter Creek, Big Rock, Factory Butte, Dirty Devil/Robbers Roost) would experience impacts to vegetation. Impacts to vegetation in these areas would occur from OHV use and use by large numbers of visitors in a limited space. These activities would result in loss of vegetation cover and soil compaction, as well as in a decrease in riparian ecological condition. Under Alternative N, these impacts to vegetation would continue or might even increase as visitor use increases.

Impacts from Travel Management

Generally, the more area that is open to OHV use, the greater the potential for adverse impacts to vegetation near the trails and in riparian areas. Limiting travel to designated routes would confine the impacts to areas that are already disturbed or hardened for vehicle use, particularly if sited away from riparian areas. Under Alternative N, 1,636,400 acres (77%) of the RFO would be open to motorized vehicles, allowing potential impacts to vegetation over a large portion of the RFO. Vehicle use in riparian areas could affect riparian functioning condition by crushing vegetation, compacting soils, eroding streambanks, increasing sediment in streams, and spreading invasive species. Motor vehicles would be limited to existing, designated, and maintained routes on 277,600 acres (13%) of the RFO; 214,000 acres (10%) of the RFO would be closed to motorized vehicle use.

Vehicles traveling on roads in the transportation system would deposit dust on roadside vegetation. This dust could lead to decreased plant vigor and increased mortality alongside the road. Dust settling on vegetation adjacent to roads would also reduce habitat suitability. Under Alternative N, 4,315 miles of unpaved routes in the RFO would be open to motorized use.

Routes within riparian areas remove and destroy riparian vegetation, increase the amount of bare soil, increase localized soil erosion, change surface hydrology, and reduce infiltration. Of all the alternatives,

Alternative N would designate routes with the greatest number of stream crossings (Table 4-13), which would result in the most impacts to riparian vegetation.

Impacts from Lands and Realty

Withdrawing lands from all forms of entry, location, selection, sale, or leasing under the public land laws would preclude future mineral location. This preclusion would reduce the potential for mining disturbance and associated impacts to vegetation and riparian conditions in these areas. However, the identified withdrawals, if established, would be subject to valid existing rights. Therefore, exploration and development impacts related to the exercise of valid existing mineral locations could occur in these areas. Alternative N proposes a total of 169,480 acres of withdrawals.

Land Tenure Adjustments (LTA) (i.e., acquiring or disposing of lands) could result in sensitive vegetative communities entering or leaving federal ownership. High-quality riparian areas are identified in the LTA criteria as areas BLM would retain or acquire, thereby increasing federal ownership of riparian areas and associated federal protection not afforded to lands in private ownership.

Impacts to vegetation resources could result from disposal of federal lands. Impacts associated with land disposals would depend upon the use of those lands by future owners. In the worst-case scenario, all vegetation would be removed from a parcel of land and the site would be paved or otherwise permanently altered to prevent future vegetation growth. This represents minor-to-moderate long-term impacts, depending upon the size and location of the parcel. Parcels that include listed threatened, endangered, or proposed species would not be identified for disposal. Identifying 280 acres as available for sale would make these lands susceptible to increased impacts to vegetation, compared with retaining the land in federal ownership, because the BLM would implement BMPs that protect the ecological health of vegetation communities in any actions it authorizes.

Impacts to vegetation resources could result from issuance of land use authorizations (e.g., ROWs, permits, leases, easements). Impacts from issuance of these authorizations would vary, based on the nature and purpose of the authorization. Impacts to vegetation and riparian areas would generally be minor to moderate and would be addressed in site-specific NEPA analysis. Under Alternative N, all ACECs (14,780 acres), eligible WSR corridors (12 segments—135 miles), areas closed to leasing (459,700 acres), and areas open to leasing subject to major constraints (NSO) (22,600 acres) would be managed as ROW avoidance areas. (Exceptions would be granted only when the proposed authorization would not create substantial surface disturbance or would create only temporary impacts.) Thus, impacts to vegetation and riparian areas in these avoidance areas would be negligible-to-minor and would be localized.

Impacts from Minerals and Energy

Impacts to desert shrub, sagebrush steppe, forest and woodland, and riparian communities could result from locatable mineral development, oil and gas development, or mineral material sales and disposal. Although the actual footprint of a well pad or mine may be relatively small, production and development require additional infrastructure, such as roads and pipelines that extend beyond the development site. Mineral development activities are expected to impact vegetation communities and riparian-wetland ecosystems within the planning area because of resulting habitat modification, mortality of individual plants, and soil disturbances. Impacts associated with these actions would include loss or damage of plants because of excavation or trampling, burial under piles of waste material, toxic responses from use of chemicals in mineral extraction or waste pits, and increased exposure to dust and other contaminants associated with construction and use of access roads. Mineral development would impact riparian areas, seeps, and springs through increased runoff, by decreasing infiltration and evapotranspiration from reduction in vegetation cover and increasing the amount of impermeable surface associated with roads, structures, and compacted soil. In addition, disturbance of reclamation-limited soils could increase the

opportunity for exotic plant species and noxious weed infestations, which would impair the functioning conditions in vegetation communities and riparian areas. The severity of effects would depend on the amount of activity and the success of reclamation efforts for disturbed areas. These impacts would be associated with the estimated development of 454 wells and an associated 8,180 acres of disturbance for associated facilities and geophysical exploration on BLM lands under all alternatives, which constitutes less than 1% of BLM lands in the Planning Area. Effects from minerals management would be reduced by BMPs outlined in mining laws, plans of operation, pertinent restrictions, and standard terms and conditions within these areas, based on site-specific analysis. Additional Conditions of Approval (COA) could be applied to the lease terms as necessary to establish specific, necessary mitigation measures not covered by lease stipulations for resource and environmental protection.

The acreage in each leasing category would quantify impacts to vegetation in terms of acres of surface disturbance. These categories, listed from greatest to least amount of surface disturbance, are as follows: open to leasing subject to the standard terms and conditions, open to leasing subject to moderate constraints (TL, CSU), open to leasing subject to major constraints (NSO), and closed to leasing. Generally, areas that are closed to leasing or open to leasing subject to major constraints (NSO) would experience little or no surface disturbance caused by minerals development; thus, negligible or no adverse impacts to vegetation and riparian resources would occur in these areas. Areas open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU) would experience short- and long-term impacts to vegetation and riparian resources from surface disturbance associated with minerals development as described.

Leasable Minerals

Under Alternative N, 459,700 acres would be closed to leasing; 22,600 acres would be open to leasing subject to major constraints (NSO); and 1,645,700 acres would be open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU). Withdrawing areas from mineral operations or categorizing areas as closed to leasing or open to leasing subject to moderate constraints (NSO) would prevent impacts to vegetation within those areas. (See Impacts from Lands and Realty for a discussion of withdrawals.) Exploration and development of oil and gas resources in areas open to leasing subject to moderate constraints (TL, CSU) or open to leasing subject to the standard terms and constraints could impact vegetation and riparian resources associated with the estimated development of 454 wells and the associated 8,180 acres of surface disturbance, particularly in the Sevier and Sanpete Valleys, where most of the development is expected.

Adherence to BMPs outlined in mining laws, plans of operation, pertinent restrictions, and standard terms and conditions would help minimize impacts to vegetation and riparian resources. Under Alternative N, management actions that include permit requirements to revegetate disturbed sites and requirements for a 500-foot buffer around riparian areas would also minimize the impacts.

Locatable Minerals

Exploration and development of locatable minerals within the 1,958,520 acres of BLM land that are open to locatable mineral development (92% of the RFO) would create surface disturbances that could adversely impact vegetation and riparian resources. However, plan of operations-level development would be addressed in a site-specific environmental analysis, and notice-level activity would be regulated to prevent undue and unnecessary degradation. These actions would minimize adverse impacts associated with mineral development. Withdrawals would reduce the amount of land open to disturbance and would prevent associated impacts to vegetation and riparian resources in these areas.

Salable Minerals

Under Alternative N, 459,700 acres would be closed to disposal of mineral materials and 169,480 acres would be withdrawn from mineral entry. Closing or withdrawing areas from mineral operations would prevent impacts to vegetation and riparian resources within those areas. Adverse impacts to vegetation and riparian resources would occur where mineral material sales were authorized. Adherence to BMPs outlined in mining laws, plans of operation, pertinent restrictions, and standard terms and conditions would help minimize impacts to vegetation and riparian resources.

Managing riparian areas to preclude surface disturbance within 500 feet of riparian areas in the Cedar/Beaver/Garfield/Antimony Proposed RMP area and within 330 feet of riparian areas throughout the remainder of the RFO would minimize the impacts from surface disturbance associated with disposal of mineral materials to riparian and wetland communities.

Impacts from Special Designations

Wilderness Study Areas

Managing WSAs under the IMP would prevent most ground-disturbing activities. This prevention would result in protection for vegetation and riparian resources. However, opportunities for vegetation treatments could be limited, which would inhibit or prevent attainment of ecological objectives and desired conditions for desert shrub, sagebrush steppe, forest and woodland, and riparian communities in these areas.

Wild and Scenic Rivers

Protecting the outstandingly remarkable values of the eligible WSRs would help protect riparian vegetation by preventing ground-disturbing activities in the river corridors. All eligible segments (12 segments—135 miles) would be managed to protect their outstandingly remarkable values, free-flowing nature, and tentative classification under Alternative N. This protection would benefit riparian vegetation by limiting ground disturbance in these areas. However, opportunities for vegetation treatments could be limited, thereby inhibiting or preventing attainment of ecological objectives and desired conditions for desert shrub, sagebrush steppe, forest and woodland, and riparian communities in the river corridors.

Areas of Critical Environmental Concern

Although ACEC designation alone does not necessarily provide protection, management actions included in ACECs often are more restrictive, thus indirectly providing protection for vegetation and riparian-wetland communities. Protections associated with ACEC designation that would affect vegetation and riparian-wetland resources include managing oil and gas leasing as closed to leasing or open to leasing subject to moderate constraints (NSO), implementing more restrictive VRM designations, restricting livestock grazing, and implementing travel limitations. Alternative N continues the designation of four ACECs (14,780 acres). Vegetation was specifically identified as a relevant and important value in the North Caineville Mesa and South Caineville Mesa ACECs. Allowing no uses that would cause irreparable damage to the relevant and important values in these areas (closing to OHV use; managing as either closed to leasing or open to leasing subject to moderate constraints [NSO], depending on the ACEC; managing as unavailable for livestock grazing in three of the four ACECs; and acquiring inholdings) would reduce surface-disturbing activities within those areas and would protect vegetation and riparian-wetland resources. However, opportunities for vegetation treatments could be limited, thus inhibiting or preventing attainment of ecological objectives and desired conditions for desert shrub, sagebrush steppe, forest and woodland, and riparian communities in these areas.

Alternative A

Impacts from Soil Resources

Impacts would be the same as those described under Alternative N.

Impacts from Vegetation and Fire and Fuels Management

The types of impacts experienced as a result of vegetation and fire and fuels management would be similar to those described under Alternative N. However, under Alternative A, maximum treatment acreage limits would be set (averaging 73,600 annually for all treatments). No target (maximum or minimum) treatment acreage limits would be set under Alternative N. Therefore; fewer acres might be treated under that alternative during some years. However, more acres could be treated during years when numerous wildland fires occur, because the 2005 Land Use Plan Amendment for Fire and Fuels Management allows the full range of fire and fuels management actions to achieve ecosystem sustainability. Alternative A allows for the treatment of vegetation by using a full range of treatment types (including mechanical, wildland fire use or prescribed fire, and chemical methods). Additionally, full suppression of wildland fires is not mandated under Alternative A; this decision would reduce pinyon-juniper encroachment and decrease the risk of large or intense wildfires. Thus, impacts to vegetation and riparian-wetland resources under Alternative A would likely result in increased short-term impacts (altered vegetation structure) compared to Alternative N but decreased long-term impacts (improved vegetative cover and increased plant diversity, resulting in stabilized soil, improved overall watershed function and condition, and greater infiltration and soil moisture storage).

Impacts from Visual Resources

The types of impacts experienced as a result of VRM would be similar to those described under Alternative N. Under Alternative A, 446,900 acres (21% of the lands managed by the RFO) would be designated as VRM Class I; 0 acres would be designated as VRM Class II; 392,800 acres (18%) would be designated as VRM Class III; and 1,288,300 acres (61%) would be designated as VRM Class IV. Designating the majority of the RFO as VRM Class III or IV could result in large areas of moderate-to-major modifications in the existing character of the landscape and could allow the greatest flexibility for vegetation treatments. This design would allow for increased short-term impacts to vegetation but could also result in long-term improvement in ecological condition of treated areas.

Impacts from Special Status Species

The types of impacts experienced as a result of SSS management would be similar to those described under Alternative N. However, Alternative A includes additional strategies (including employing directional drilling for oil and gas, closing and reclaiming roads, mitigating the effects of proposed projects that have the potential to cause long-term or permanent impacts or loss of habitat, and using species-specific buffers for surface-disturbing activities) to avoid or reduce fragmenting habitat. All these actions would benefit vegetation and riparian-wetland resources by reducing surface disturbance and by reducing the potential for invasion and spread of invasive species.

Impacts from Fish and Wildlife

The types of impacts experienced as a result of fish and wildlife management would be similar to those described under Alternative N. However, Alternative A proposes restricting surface disturbance or surface occupancy within 330 feet of riparian areas (versus within 500 feet of riparian areas in the Cedar/Beaver/Garfield/Antimony Proposed RMP area and within 330 feet of riparian areas throughout the remainder of the RFO for Alternative N) and includes fewer restrictions on OHV use in crucial wildlife habitats. These management actions would increase the potential for degradation of riparian and upland habitats, as well as the potential for the spread of invasive species under Alternative A.

Impacts from Wild Horses and Burros

Impacts would be the same as those described under Alternative N.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside WSAs are proposed under Alternative A, resulting in no additional protection for vegetation.

Impacts from Forestry and Woodland Products

Alternative A allows for harvesting of forest and woodland products across most of the RFO (all areas, outside of WSAs) when sustainable and compatible with restoring, maintaining, or improving forest health. Although the impacts would be similar to those described for Alternative N, Alternative A includes objectives to emphasize woodland health. Harvesting of forest and woodland products would involve vehicle use to access the harvesting site and loss of vegetative cover, thus resulting in localized, minor-to-moderate impacts on vegetation and riparian-wetland resources. Indirect effects could include short- or long-term changes in species composition or community structure as well as increased erosion and decreased riparian functioning condition. However, removal of pinyon and juniper trees from areas in which they have invaded or areas in which canopy densities would have increased results in reduced amounts of bare ground and increased litter at the soil surface. Because pinyon pine and juniper vigorously compete with other plants for available soil water, their removal allows for regrowth of grasses and shrubs in the understory vegetation. This regrowth acts as a protective vegetative cover for the soil surface, resulting in decreased erosion and improved ecological condition of the plant community. Thus, management of forestry and woodland products under Alternative A would have beneficial impacts to vegetation, compared to Alternative N.

Improvement in the ecological condition of forests and woodlands could also improve riparian-wetland function by improving soil stability, reducing excessive runoff, and increasing infiltration of water into root systems that could indirectly benefit riparian resources. However, because areas in which forest and woodland products tend to be harvested are generally not riparian areas, the overall effects of forestry and woodlands decisions on riparian resources would be negligible.

Impacts from Livestock Grazing

The types of impacts experienced as a result of livestock grazing management would be similar to those described under Alternative N. Under Alternative A, 102,002 acres would be unavailable to livestock grazing, and 2,025,998 acres would be available for grazing. Although livestock grazing could increase soil compaction in trailing, watering, and mineral-supplement areas and could indirectly impact riparian-wetland areas and riparian functioning condition, grazing within the RFO would be managed in keeping with applicable laws and regulations, the *Fundamentals of Rangeland Health* and *Standards and Guidelines for Grazing Administration,* and BLM's Utah Riparian Policy. Adhering to these statewide standards, guidelines, and policy would minimize impacts from livestock grazing by maintaining plant vigor and increasing litter accumulation, resulting in the maintenance or improvement of organic matter content, soil structure, permeability, productivity, and riparian-wetland function. This would ensure that upland soils would exhibit infiltration, permeability, and erosion rates that are appropriate to soil type, climate, and landform and would ensure that riparian areas achieve or maintain proper functioning condition. Therefore, impacts would be minor area-wide but could be moderate in specific areas, such as in riparian areas.

Impacts from Recreation

Under Alternative A, five SRMAs (514,500 acres) would be established to manage recreational use and to mitigate the impacts caused by this use, such as uncontrolled camping, parking, and other activities. Limiting OHV use in the Otter Creek Reservoir SRMA to designated routes would maintain existing soil,

water, and riparian resource conditions by concentrating impacts to already disturbed areas and by reducing the extent of soil compaction. Maintaining the existing condition of riparian-wetland areas would reduce soil erosion. Reducing the extent of soil compaction would indirectly maintain existing infiltration and soil-water distribution patterns.

The construction of recreation facilities in the Big Rock SRMA could have localized, adverse, short-term impacts caused by removal of vegetation in those areas. However, long-term impacts would be beneficial by concentrating use areas and thus limiting the extent of vegetation disturbance. Managing the Dirty Devil/Robbers Roost SRMA (290,000 acres) for primitive and semi-primitive recreation would indirectly maintain or reduce the potential for vegetation disturbance from recreation. Limiting OHV recreation use in the Dirty Devil/Robbers Roost SRMA to designated routes would reduce potential surface disturbance and localized removal of vegetation. Managing the Sahara Sands SRMA (12,300 acres) for a roaded natural recreational opportunity and the development of facilities would have site-specific impacts, including soil compaction, changes in surface hydrology, and increased runoff. Managing the Factory Butte SRMA (199,700 acres) for a motorized recreational opportunity and allowing moderate-to-extensive landscape modification would have potentially major impacts by eliminating vegetation or altering plant communities (reducing species diversity or increasing the potential for introduction and spread of invasive species) over a relatively large area.

Impacts from Travel Management

The types of impacts experienced as a result of travel management would be similar to those described under Alternative N. However, Alternative A designates 449,000 acres (21%) of the RFO as open to motorized vehicles; motor vehicles would be limited to designated routes on 1,679,000 acres (79%) of the RFO; and 0 acres would be closed to motorized vehicle use. The amount of open areas, although greatly reduced compared to Alternative N, would still result in impacts to vegetation from vehicle use in those areas.

The remainder of the RFO would limit motorized use to designated routes, therefore limiting potential impacts to vegetation occurring in the immediate vicinity of the route. The public would have access to 4,312 miles of unpaved routes (essentially the same as Alternative N); 68 miles of routes would be closed, allowing these areas to revegetate. No areas would be closed to motorized use, with no accompanying benefits to vegetation.

Vehicle use in riparian areas could affect riparian functioning condition by crushing vegetation, compacting soils, eroding streambanks, increasing sediment in streams, and spreading invasive species. Alternative A would designate routes with 443 stream crossings (Table 4-13), the second-most crossings of all the alternatives.

Impacts from Lands and Realty

The types of impacts experienced as a result of lands and realty would be similar to those described under Alternative N, although impacts to vegetation could occur over a larger area because fewer acres would be proposed for withdrawal (154,700 acres under Alternative A), more acres would be proposed for disposal (13,400 acres), and fewer ROW avoidance areas (446,900 acres closed to leasing) would be proposed. Thus, impacts to vegetation from surface-disturbing activities would be greater under Alternative A than under Alternative N.

Impacts from Minerals and Energy

The types of impacts experienced as a result of minerals and energy would be similar to those described under Alternative N. Development of oil and gas resources could affect vegetation because of the surface disturbances associated with such development. However, adherence to BMPs outlined in mining laws,

plans of operation, pertinent restrictions, and standard terms and conditions would help minimize impacts to vegetation and riparian-wetland resources. Closing or withdrawing areas from mineral operations would prevent impacts to vegetation and riparian-wetland resources within those areas. (See Impacts from Lands and Realty for a discussion of withdrawals.) Alternative A proposes fewer acres of mineral withdrawals (154,700 acres), fewer areas closed to leasing and closed to disposal of mineral materials (446,900 acres), and fewer areas open to leasing subject to major constraints (NSO) (0 acres), thereby providing less protection to vegetation and riparian-wetland resources.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Under Alternative A, no eligible river segments would be recommended as suitable. No special management to protect the outstandingly remarkable values of these rivers would be provided, so WSR designation would not apply to riparian vegetation within these corridors and such vegetation would not be protected from ground-disturbing activities. Opportunities for vegetation treatments would not be restricted, which could assist in attaining ecological objectives and desired conditions in the river corridors. However, most of the eligible river segments (98 of the 135 miles total) are also within WSAs. Consequently, none of the described ground-disturbing activities would occur in those river corridors.

Areas of Critical Environmental Concern

Alternative A designates no ACECs, so no special management to protect desert shrub, sagebrush steppe, forest and woodland, and riparian communities (including vegetation in the North Caineville Mesa and South Caineville Mesa potential ACECs, which was specifically identified as a relevant and important value in those areas) is proposed. Allowing uses that would cause irreparable damage to the relevant and important values in these areas could result in surface-disturbing activities that could impact vegetation resources within those areas. However, opportunities for vegetation treatments would not be limited, which would assist in attaining ecological objectives and desired conditions in these areas.

Proposed RMP

Impacts from Soil Resources

Impacts would be similar to those described under Alternative N. However, new BMPs would improve soil conditions.

Impacts from Vegetation and Fire and Fuels Management

Impacts would be the same as those described under Alternative A, except allowing temporary non-renewable use of targeted livestock grazing to reduce site-specific fuels or noxious and invasive weeds could maintain or improve upland vegetation conditions and reduce cheatgrass and other invasive weeds. In forests and woodlands, this action would reduce fuel loads and noxious and invasive weeds, leading to improved health of these communities.

Impacts from Visual Resources

The types of impacts experienced as a result of VRM decisions would be similar to those described under Alternative N. Under the Proposed RMP, 446,900 acres (21% of the lands managed by the RFO) would be designated as VRM Class I; 249,800 acres (12%) would be managed as VRM Class II; 393,100 acres (18%) would be managed as VRM Class III; and 1,038,200 acres (49%) would be managed as VRM Class IV. Designating the majority of the RFO as VRM Class III or IV could result in large areas of

moderate-to-major modifications in the existing character of the landscape and could allow the greatest flexibility for vegetation treatments. However, less of the RFO would be designated in these VRM classes than under Alternative N or A, resulting in less potential short-term impacts to vegetation and less long-term improvement in ecological condition of degraded areas, compared to those alternatives.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative A.

Impacts from Fish and Wildlife

Impacts to vegetation under the Proposed RMP would be similar to those described under Alternative A. However, the Proposed RMP would restrict surface disturbance or surface occupancy within the 100-year floodplain or 330 feet of riparian areas, whichever is greater (versus 330 feet for Alternative A). This alternative also proposes temporal (winter and/or spring, depending on species) restrictions on surface-disturbing activities (to protect wildlife during critical life stages) and restricts OHV use in deer and elk crucial habitats. The management actions would also benefit vegetation by limiting activities during wet seasons (which would reduce soil compaction and could reduce plant vigor) and by restricting activities that could result in vegetation loss.

Impacts from Wild Horses and Burros

Under the Proposed RMP, 600 AUMs are allocated to burros in the Canyonlands HMA, to meet an AML upper limit of 100. These numbers are greater than either Alternative N or A but fewer than DRMP/DEIS Alternative C or D (which establish a herd size of between 120 to 200 head). Because more burros result in a greater possibility of adverse impacts to vegetation because of trampling and reduced vegetation cover, the Proposed RMP would potentially impact vegetation more than DRMP/DEIS Alternative N or A but less than DRMP/DEIS Alternative C or D.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under the Proposed RMP, 78,600 acres would be managed to maintain wilderness characteristics. Management actions would include the following: designating the areas as closed to leasing or open to leasing subject to major constraints (NSO), restricting OHV use to designated routes; and designating the areas as VRM Class II. The emphasis on naturalness and a lack of surface-disturbing activities within these areas would minimize direct impacts from surface-disturbing activities to vegetation. The management prescriptions, specifically managing as VRM Class II, could also limit options of managing vegetation. The results would be less long-term improvement in the ecological condition of degraded areas, compared to DRMP/DEIS Alternatives N, A, or C because opportunities to perform vegetation treatments would be limited in their methods. However, these areas would be available for healthy lands initiative projects, which would reduce the magnitude of this impact, compared to Alternative D. This impact would be most pronounced in the Ragged Mountain, Mount Pennell, and Mount Ellen—Blue Hills, non-WSA lands in which vegetation treatments could be needed to improve buffalo habitat. Vegetation treatments could be completed using only fire or biological treatment methods, which may not obtain the results being sought for habitat manipulation in a timely manner.

The remainder of the non-WSA lands with Wilderness Characteristics (604,000 acres) would be managed according to other resource decisions of the Proposed RMP. Impacts would be the same as described under DRMP/DEIS Alternative A.

Impacts from Forestry and Woodland Products

The types of impacts experienced as a result of forestry and woodlands management would be similar to those described under DRMP/DEIS Alternative A, although more lands would be closed to this type of use under the Proposed RMP (one WSR segment –5 miles, compared to zero segments under Alternative

A). Thus, localized disturbance to vegetation and changes in vegetation community composition and structure would be less under the Proposed RMP than under Alternative A.

Impacts from Livestock Grazing

The types of impacts experienced as a result of livestock grazing decisions would be similar to those described under Alternative A, although less land would be available for grazing under the Proposed RMP (1,989,048 acres, compared to 2,025,998 acres under Alternative A). Livestock grazing would be managed in keeping with applicable laws and regulations the *Fundamentals of Rangeland Health*, and *Standards and Guidelines for Grazing Administration,* and BLM's Utah Riparian Policy. Therefore, impacts from livestock grazing would be minimized by maintaining plant vigor and by increasing litter accumulation, resulting in the maintenance or improvement of organic matter content, soil structure, permeability, productivity, and riparian-wetland function. Impacts would be minor area-wide but potentially moderate in specific areas such as riparian areas, although the difference between alternatives is negligible.

Impacts from Recreation

Under the Proposed RMP, five SRMAs (860,390 acres) would be established to manage recreational use and to mitigate impacts caused by this use, such as uncontrolled camping, parking, and other activities. Limiting OHV use to designated routes would maintain existing soil, water, and riparian resource conditions by concentrating impacts to already disturbed areas and by reducing the extent of soil compaction. Maintaining the existing condition of riparian-wetland areas would reduce soil erosion. Reducing the extent of soil compaction would indirectly maintain existing infiltration and soil-water distribution patterns.

Establishing a Factory Butte SRMA would limit the impacts of cross-country OHV use on vegetation to a 8,500 acre area. Construction of facilities in the Big Rock SRMA would have localized, adverse impacts caused by removing of vegetation in those areas; long-term impacts would be beneficial by concentrating use areas and thus limiting the extent of vegetation disturbance. Managing the Dirty Devil/Robbers Roost SRMA (290,500 acres) for primitive and semi-primitive recreation would reduce the potential for surface disturbance and localized vegetation removal caused by recreation. Closing canyons within the Dirty Devil/Robbers Roost SRMA to OHV recreation use and limiting OHV recreation use to designated routes would reduce potential impacts to vegetation. Managing the Capitol Reef Gateway SRMA (12,800 acres) for a natural recreation experience and the development of facilities would have localized, adverse impacts caused by removal of vegetation in those areas; long-term impacts would be beneficial by concentrating use areas and thus limiting the extent of vegetation disturbance. Managing the Henry Mountains SRMA for primitive and semi-primitive recreation would indirectly maintain or reduce the potential for soil disturbance.

The Proposed RMP establishes more areas as SRMAs than does Alternative N or A but fewer areas than does Alternative C or D. Therefore, the Proposed RMP would provide more protection to vegetation as a result of recreation decisions than would Alternative N or A and would provide less protection than would Alternative C or D.

Impacts from Travel Management

The Proposed RMP designates only 9,890 acres (less than 1% of the RFO) as open to motorized vehicles, thereby minimizing direct impacts to vegetation, as a result of vehicles trampling plants. The amount of open areas, although greatly reduced compared to Alternative N, would result in direct and indirect impacts that vehicle use in those areas would cause to vegetation. The absence of vehicle use in riparian areas would benefit riparian functioning condition, by eliminating vehicles crushing vegetation, compacting soils, eroding streambanks, increasing sediment in streams, and spreading invasive species.

The Proposed RMP would close 209,900 acres (10% of the RFO) to motorized use, thereby eliminating all impacts that vehicles driving over plants and depositing dust on individual plants could cause to vegetation. This restriction would allow for revegetation and increased plant vigor in closed areas that had previously been open or limited.

The remainder of the RFO (1,908,210 acres) would limit motorized use to designated routes, thereby limiting potential impacts to vegetation in the immediate vicinity of the route. The public would have access to 4,277 miles of unpaved routes (slightly less than under Alternative N); 345 miles of routes would be closed (more than double the amount closed under Alternative N), allowing these areas to revegetate.

Vehicle use in riparian areas could affect riparian functioning condition by crushing vegetation, compacting soils, eroding streambanks, increasing sediment in streams, and spreading invasive species. The Proposed RMP would designate routes with 400 stream crossings (Table 4-13)—fewer than under Alternative N or A but more than under Alternative C or D.

Impacts from Lands and Realty

Impacts to vegetation would occur over a smaller area than in Alternative N. Impacts to vegetation would occur over a smaller area than Alternative N because more acres would be proposed for withdrawal (176,200 acres under the Proposed RMP) and more acres would be designated ROW avoidance areas (630,600 acres closed to leasing or open to leasing subject to major constraints [NSO], one suitable WSR segment—5 miles, and two ACECs—2,530 acres). Thus, impacts to vegetation and riparian resources because of surface-disturbing activities would be less under the Proposed RMP than under Alternative N.

Impacts from Minerals and Energy

The types of impacts that would result from minerals and energy decisions would be similar to those described under Alternative N. However, the Proposed RMP proposes more acres of mineral withdrawals (176,200 acres) than does Alternative N or A. These withdrawals would preclude mineral and energy development in those areas and thus allow less disturbance to vegetation and riparian resources.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Protecting the outstandingly remarkable values of suitable WSRs would help protect vegetation and riparian resources by preventing ground-disturbing activities in the river corridors. One suitable segment (5 miles) would be managed to protect their outstandingly remarkable values, free-flowing nature, and wild classification under the Proposed RMP. This management would benefit riparian vegetation by limiting ground disturbance in the area, although opportunities for vegetation treatments could be limited, thereby inhibiting or preventing attainment of ecological objectives and desired conditions in these river corridors.

Of the remaining segments not being carried forward into the Proposed RMP, 98 miles are within WSAs, which are managed under the IMP and are consequently mostly protected from surface disturbing activities, leaving 32 miles on which ground-disturbing activities could potentially impact vegetation. The Proposed RMP would provide less protection to vegetation from WSR decisions than would Alternative N, C, or D but would provide more protection than would Alternative A.

Areas of Critical Environmental Concern

The Proposed RMP designates two ACECs (2,530 acres). Vegetation was specifically identified as a relevant and important value in the North Caineville Mesa and Old Woman Front ACECs. Allowing no uses that would cause irreparable damage to the relevant and important values in these areas would reduce surface-disturbing activities within those areas, thereby protecting vegetation and riparian resources and R and I values. Restrictions could include closing the areas to OHV use; managing the areas as open to leasing subject to major constraints (NSO), depending on the ACEC; making the areas unavailable for livestock grazing; and acquiring inholdings.

Alternative C

Impacts from Soil Resources

Impacts would be the same as those described under Alternative N.

Impacts from Vegetation and Fire and Fuels Management

The types of impacts experienced as a result of vegetation and fire and fuels management would be similar to those described under Alternative A. However, under Alternative C, fewer acres would be treated annually (averaging 26,000 annually for all treatments). In addition, Alternative C proposes only treatment methods that mimic natural processes to manage vegetation. Such methods could be less effective than conventional vegetation treatments and would not be effective in all vegetation and riparian-wetland communities. The result could be the loss of existing vegetation cover, indirectly decreasing the ecological condition of the treated area. Control of some invasive species could also be difficult because of lack of suitable substitute treatments, possibly allowing the spread of invasive species and displacement of desirable vegetation (using fire as a control tool for invasive species, including tamarisk, could increase the growth and spread of these species). Thus, impacts to vegetation and riparian-wetland resources under Alternative C would likely result in less short-term impacts (altered vegetation structure) but more long-term impacts (reduced vegetative cover and plant diversity) than under Alternative A.

Impacts from Visual Resources

The types of impacts experienced as a result of VRM decisions would be similar to those described under Alternative N. Under Alternative C, 446,900 acres (21% of the lands managed by the RFO) would be designated as VRM Class I; 230,600 acres (11%) would be designated as VRM Class II; 509,100 acres (24%) would be designated as VRM Class III; and 941,400 acres (44%) would be designated as VRM Class IV. Designating the majority of the RFO as VRM Class III or IV could result in large areas of moderate-to-major modifications in the existing character of the landscape and could allow greater flexibility for vegetation treatments. However, less of the RFO would be designated in these VRM classes than under Alternative N or A or the Proposed RMP, resulting in less potential short-term impacts to vegetation and riparian resources and less long-term improvement in ecological condition of degraded areas, compared to those alternatives.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative A.

Impacts from Fish and Wildlife

The types of impacts experienced as a result of fish and wildlife management would be similar to those described under Alternative A. However, Alternative C proposes restricting surface disturbance or surface occupancy within 660 feet of riparian areas (versus 330 feet for Alternative A), includes more restrictions on OHV use in wildlife habitats, and designates an ACEC in the Henry Mountains (288,200 acres) for the

protection of wildlife values. These additional management actions would decrease the potential for impacts to vegetation and would increase protection for riparian vegetation under this alternative.

Impacts from Wild Horses and Burros

Under Alternative C, 1,200 AUMs are allocated to burros in the Canyonlands HMA to meet an AML upper limit of 200. These numbers are greater than under Alternative N or A or the Proposed RMP. Because more burros result in a greater possibility of adverse impacts on vegetation because of trampling, compaction, and reduced vegetation cover, Alternative C would potentially impact vegetation more than would Alternative N or A or the Proposed RMP.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under Alternative C, resulting in no additional protection for vegetation.

Impacts from Forestry and Woodland Products

The types of impacts experienced as a result of forestry and woodlands management would be similar to the Proposed RMP, although more lands (12 WSR segments—135 miles) would be closed to this type of use under Alternative C. Thus, localized disturbance to vegetation and changes in vegetation community composition and structure would be reduced under this alternative, compared to the Proposed RMP.

Impacts from Livestock Grazing

Impacts would be the same as those described under the Proposed RMP.

Impacts from Recreation

The types of impacts experienced as a result of recreation management would be similar to those described under the Proposed RMP. Under Alternative C, four SRMAs (930,000 acres) would be established to manage recreational use and to mitigate impacts caused by this use, such as uncontrolled camping, parking, and other activities. No SRMAs would be established for OHV recreation; thereby eliminating impacts that cross-country OHV use could cause to vegetation. All SRMAs would be established to provide for primitive or semi-primitive recreation opportunities. OHV use would be limited to designated routes, and facilities would either not be provided or would be the minimal necessary. These management prescriptions would reduce the potential for surface disturbance and localized vegetation removal caused by recreation and would benefit riparian functioning condition by eliminating vehicles that could crush vegetation, compact soils, erode streambanks, increase sediment in streams, and spread invasive species.

Alternative C would establish more areas as SRMAs than would Alternative N or A or the Proposed RMP but fewer areas than would Alternative D. Therefore, Alternative C would provide more protection to vegetation as a result of recreation decisions than would Alternative N or A or the Proposed RMP and less protection than would Alternative D.

Impacts from Travel Management

The types of impacts experienced as a result of travel management would be similar to those described under the Proposed RMP. However, Alternative C designates no areas as open to motorized vehicles; motor vehicles would be limited to designated routes on 1,445,000 acres (68%) of the RFO; and 683,000 acres (32%) would be closed to motorized vehicle use. The lack of open areas would eliminate impacts that vehicle use in those areas could cause to vegetation.

Limiting motorized use to designated routes—the public would have access to 3,192 miles of unpaved routes—would limit impacts to vegetation to areas in the immediate vicinity of the designated route;

1,188 miles of routes would be closed, allowing these areas to revegetate. Prohibiting construction of new routes in riparian areas would provide additional protection for riparian resources by precluding new disturbance (crushing of vegetation, compacting soils, eroding streambanks, increasing sediment in streams, and spreading invasive species) in these areas.

Vehicle use in riparian areas could affect riparian functioning condition by crushing vegetation, compacting soils, eroding streambanks, increasing sediment in streams, and spreading invasive species. Alternative C would designate routes with 273 stream crossings (Table 4-13), the second most crossings under all the alternatives and only slightly more than under Alternative D.

Impacts from Lands and Realty

The types of impacts experienced as a result of lands and realty decisions would be similar to those described under Alternative N. However, impacts to vegetation could occur over a much smaller area because more acres would be proposed for withdrawal (331,100 acres under Alternative C) and more acres would be designated ROW avoidance areas (735,000 acres closed to leasing or open to leasing subject to major constraints [NSO], 12 suitable WSR segments, and 16 ACECs). Thus, impacts to vegetation and riparian resources from surface-disturbing activities would be less under this alternative than under Alternative N.

Impacts from Minerals and Energy

The types of impacts experienced as a result of minerals and energy decisions would be similar to those described under Alternative N. However, Alternative C proposes more acres of mineral withdrawals (331,100 acres), compared to Alternative N or A or the Proposed RMP. These withdrawals would preclude mineral and energy development in those areas and thus reduce disturbance to vegetation and riparian resources.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Protecting the outstandingly remarkable values of suitable WSRs would help protect vegetation by preventing ground-disturbing activities in the river corridors. Under Alternative C, 12 suitable segments (135 miles) would be managed to protect their outstandingly remarkable values, free-flowing nature, and tentative classification. This management would benefit riparian vegetation by limiting ground disturbance in these areas. However, opportunities for vegetation treatments could be limited, which could inhibit or prevent attainment of ecological objectives and desired conditions in these river corridors.

Areas of Critical Environmental Concern

Alternative C designates 16 ACECs (886,810 acres). Vegetation was specifically identified as a relevant and important value in the North Caineville Mesa and South Caineville Mesa ACECs, and vegetation management was identified as a management prescription in the Henry Mountains ACEC to provide improved habitat for bison and mule deer, both identified as relevant and important values. Allowing no uses that would cause irreparable damage to the relevant and important values in these areas (all ACECs except for the Henry Mountains) would reduce surface-disturbing activities within those areas, thus protecting vegetation and improving the ecological condition of riparian areas. Restrictions could include closing the areas to OHV use; managing the areas as either closed to leasing or open to leasing subject to major constraints (NSO), depending on the ACEC; designating the areas as VRM Class II; making the areas unavailable for livestock grazing or fencing riparian areas in ACECs where grazing occurs; and

acquiring inholdings. However, opportunities for vegetation treatments could be limited, which could inhibit or prevent attainment of ecological objectives and desired conditions in these areas.

Alternative D

Impacts from Soil Resources

Impacts would be the same as those described under Alternative N.

Impacts from Vegetation and Fire and Fuels Management

Impacts would be the same as those described under Alternative C.

Impacts from Visual Resources

The types of impacts experienced as a result of VRM decisions would be similar to those described under Alternative N. However, these impacts would occur over a much smaller area because of differences in VRM class designations between the two alternatives. Under Alternative D, 1,129,600 acres (53% of the lands managed by the RFO) would be designated as VRM Class I; 66,700 acres (3%) would be designated as VRM Class II; 355,100 acres (17%) would be designated as VRM Class III; and 576,600 acres (27%) would be designated as VRM Class IV. Just more than one-half of the RFO would be designated as VRM Class I or II, meaning that the existing character of the landscape must be preserved or retained. Thus, surface-disturbing activities would generally not be allowed in these areas, resulting in restrictions on treating vegetation even in areas in which ecological condition has been degraded. Therefore, Alternative D would result in less potential for wind and water erosion and sedimentation to streams, as well as less potential short-term impacts to vegetation and less long-term improvement in ecological condition of degraded areas, compared to Alternative N, A, or C or the Proposed RMP.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative A.

Impacts from Fish and Wildlife

Impacts would be the same as those described under Alternative C.

Impacts from Wild Horses and Burros

Impacts would be the same as those described under Alternative C.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under Alternative D, 682,600 acres would be managed to maintain wilderness characteristics. Management actions to achieve this would include the following: designating the areas as closed to leasing; closing the area to OHV use; and designating the area as VRM Class I. The emphasis on naturalness and a lack of surface-disturbing activities within these areas would minimize direct impacts that surface-disturbing activities could cause to vegetation. It could also limit options of managing vegetation, which could result in less long-term improvement in ecological condition of degraded areas, compared to Alternatives N, A, or C or the Proposed RMP, because opportunities to perform vegetation treatments would be very limited in their methods. This would be especially true in the Kingston Ridge, Limestone Cliffs, and Wildcat Knolls non-WSA areas in which vegetation manipulations could be needed to improve deer and elk habitat, as well as in the Ragged Mountain, Mount Pennell, Mount Ellen—Blue Hills, Pole Canyon, Mount Hillers, and Bull Mountain non-WSA lands, in which vegetation treatments could be needed to improve buffalo habitat. Vegetation treatments could be completed only by using fire or biological treatment methods, which may not obtain the results being sought for habitat manipulation in a timely manner.

Impacts from Forestry and Woodland Products

Impacts would be similar to those described under Alternative C, except that no commercial or non-commercial forest and woodland products would be allowed within the 682,600 acres of non-WSA lands with wilderness characteristics. Thus, localized surface disturbance and changes in vegetation community composition and structure would be greatly reduced under Alternative D, compared to all the other alternatives.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative C.

Impacts from Recreation

Under Alternative D, seven SRMAs (1,358,100 acres) would be established to manage recreational use and to mitigate impacts caused by this use, such as uncontrolled camping, parking, and other activities. Managing these SRMAs for dispersed recreation in a primitive or semi-primitive setting would indirectly maintain or reduce the potential for surface disturbance caused by recreation. Associated management actions (closing or limiting the area for OHV use and precluding development of facilities) would minimize the potential for surface disturbance and localized removal of vegetation because of recreation and would benefit riparian functioning condition by eliminating vehicles that could crush vegetation, compact soils, erode streambanks, increase sediment in streams, and spread invasive species.

Alternative D, which establishes more areas as SRMAs than any other alternative, would provide the most protection to vegetation and riparian-wetland areas.

Impacts from Travel Management

The types of impacts experienced as a result of travel management would be similar to those described under Alternative C. However, Alternative D designates 972,800 acres (46% of the RFO) as limited to designated routes and 1,155,200 acres (54%) as closed to motorized vehicle use. The lack of open areas would eliminate impacts to vegetation from vehicle use in those areas. Limiting motorized use to designated routes—the public would have access to 3,043 miles of unpaved routes—would generally limit impacts to vegetation to areas in the immediate vicinity of the designated route; 1,242 miles of routes would be closed (the most under any alternative), allowing these areas to revegetate.

Vehicle use in riparian areas could affect riparian functioning condition by crushing vegetation, compacting soils, eroding streambanks, increasing sediment in streams, and spreading invasive species. Alternative D would designate routes with 266 stream crossings (Table 4-13), the least crossings under all the alternatives.

Impacts from Lands and Realty

The types of impacts experienced as a result of lands and realty management would be similar to those described under Alternative N, although impacts to vegetation would occur over a much smaller area because more acres would be proposed for withdrawal (903,900 acres under Alternative D) and more acres would be designated ROW avoidance areas (1,203,800 acres closed to leasing or open to leasing subject to major constraints [NSO], 12 suitable WSR segments, and 16 ACECs). Thus, impacts to vegetation from surface-disturbing activities would be much less under Alternative D than under all the other alternatives.

Impacts from Minerals and Energy

The types of impacts experienced as a result of minerals and energy would be similar to those described under Alternative N. However, impacts to vegetation would occur over a much smaller area because more acres would be proposed for withdrawal (903,900 acres under Alternative D) and more areas would be

closed to leasing or open to leasing subject to major constraints (NSO) (1,203,800 acres). Closing or withdrawing areas from mineral operations would prevent impacts to vegetation and riparian resources within those areas. Thus, impacts to vegetation and riparian resources from mining-related, surface-disturbing activities would be much less under Alternative D than under all the other alternatives.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Impacts would be the same as those described under Alternative C.

Areas of Critical Environmental Concern

Impacts would be the same as those described under Alternative C.

4.3.5 Cultural Resources

This section presents potential impacts that the alternatives could have on cultural resources, as determined through changes in or access to the resources. Cultural resources specifically include archaeological resources, historical resources, and resources of importance to Native Americans. The locations of most cultural resource sites in the Planning Area are not known. See Chapter 3 for a discussion of cultural resources in the RFO. The required consultations for Section 106 of the National Historic Preservation Act (NHPA) are in progress and will be completed prior to signature of the Record of Decision (ROD). The BLM has forwarded to the SHPO a determination that, although in some cases, management actions in this plan may have a potential to affect historic properties, there would be no adverse affect to these historic properties.

Archaeological and historical resources may be impacted by unauthorized collection and excavation, vandalism, erosion, trampling, OHV use, fire, soil compaction, and mechanized surface disturbance. Indirect impacts may cause surface disturbance that allows subsequent soil erosion and undermining of sites and structures. Indirect impacts may also allow access or lack of access for vandalism. In addition, resources of importance to Native Americans may be impacted by unauthorized collection, vandalism, erosion, trampling, OHV use, fire, mechanized surface disturbance, and loss of access to sacred or traditional use areas. These impacts affect the artifacts, features, and architecture that make up these sites, in ways that reduce their integrity, scramble their context, alter their connection to traditional values, decrease their research potential, and ultimately affect a site's eligibility for placement on the National Register of Historic Places (NRHP). Archaeological data consist of "objects" (artifacts, features, and architecture) and the spatial relationships (context) between objects. The ability to interpret and understand the past is based on both of these things. Surface and subsurface disturbances can destroy both the "objects" as well as their spatial relationships and therefore any interpretation and understanding that derives from them. Impacts from surface disturbance can not only affect the setting and physical integrity of sites and areas but can also diminish the interpretive value of those sites and areas. In general, impacts that surface disturbance cause to cultural resources are long-term in nature; once a site has been impacted, the effect typically cannot be reversed.

Current BLM policy is to categorize cultural resources according to their potential or best use. The six use categories outlined in the BLM 8110 manual recognize a greater degree of uses that different kinds of sites may be put to or objectives they may serve. The six categories are as follows:

- Scientific Use
- Conservation for Future Use
- Traditional Use
- Public Use
- Experimental Use
- Discharged from Management

In addition to providing clear management direction for specific classes of sites, allocation of cultural resources to these use categories also allows land managers to address the values of cultural resources before they are threatened by an undertaking.

4.3.5.1 Native American Religious Concerns

This section also discusses impacts to Native American religious concerns, from actions either implemented or authorized by BLM. All federal agencies must consider two major issues relating to Native Americans: 1) traditional cultural properties and 2) sacred sites.

A traditional cultural property (TCP) is a property that possesses traditional cultural significance derived from the role that the property plays in a group's historically rooted beliefs, customs, and practices. There are various types of TCPs, but those of concern to Native American coordination efforts are typically 1) locations associated with the traditional beliefs of a Native American group about its origins, its cultural history, or the nature of the world; or 2) locations to which Native American religious practitioners have historically gone, and may still go, to perform traditional ceremonial activities. A TCP is a property that is eligible for inclusion in the NRHP because of its association with cultural practices or beliefs of a living community that 1) are rooted in that community's history and 2) are important in maintaining the continuing cultural identity of the community.

Sacred sites are defined in Executive Order 13007, Indian Sacred Sites, as "any specific, discrete, narrowly delineated location on Federal land that is identified by an Indian tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion; provided that the tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of such a site." This appears to be a very limiting definition, but sacred sites can and do consist of a variety of places and landscapes (e.g., springs, mountains, caves, archaeological sites). Some of the better known sites are the Sweetgrass Hills in Montana, the San Francisco Peaks in Arizona, and the Medicine Wheel in the Bighorn Mountains of Wyoming.

The Executive Order requires that sacred sites must be identified as such either by a Native American tribe or by a Native American individual whom the tribe has named as the appropriately authoritative representative of its religion. The important point here is that the Federal Government has no role in the identification or validation of sacred sites. The sovereign-government-to-sovereign-government nature of consultation between Native American tribes and the Federal Government dictates that the determination of sacred sites is a Native American role. The tribes may or may not choose to disclose the qualities that contribute to the sacred nature of a site but, regardless of their choice, there is no review of such determinations by a federal agency.

Sacred sites generally fall under a completely different set of criteria than TCPs. A big difference between TCPs and sacred sites is that TCPs are a Section 106 issue with protection afforded by compliance with that section of the NHPA. Section 106 compliance involves detailed review by the State Historic Preservation Officer (SHPO) and, if need be, the Advisory Council on Historic Preservation. Sacred sites are not subject to such review. Sacred sites are a NEPA issue and must be treated carefully in any land-use planning and decision-making. However, even this distinction can be blurred in the case of the sacred site that meets certain NRHP eligibility criteria and also qualifies as a TCP. In such cases, sacred sites are subject to Section 106 compliance.

In addition to the NEPA requirements, Executive Order (EO) 13007 requires federal land management agencies to accommodate access to and ceremonial use of Native American sacred sites by Native American religious practitioners and to avoid adversely affecting the physical integrity of such sacred sites. EO 13007 also requires agencies to develop procedures for reasonable notification of proposed actions or land management policies that may restrict access to or ceremonial use of sacred sites or that may adversely affect sacred sites.

Impacts and Mitigation

Mitigation of impacts to Native American religious concerns is an entirely different matter than the treatment of threatened cultural resources. From the perspective of traditional religious practitioners, a particular area could be regarded as a hallowed place, perhaps devoted to or having been the scene of special religious rites and ceremonies. Practitioners and believers might perceive any secular use or development in such a place to be injurious to its exceptional sacred qualities or to be a sacrilege and

therefore unacceptable. The BLM manager might be put in the position of having to weigh a proposal for a legally and politically supported use, such as mineral development, in an area regarded as sacred and inviolate. Therefore, the participation of tribes in the environmental analysis process is both encouraged and invited so that such concerns might be made known. Mitigation strategies designed to reduce or eliminate impacts of proposed undertakings generally follow models related to NEPA and NHPA and their implementing regulations. In the case of NHPA, these mitigation strategies generally consist of avoiding the resource, redesigning the project, or otherwise safeguarding what makes the historic resource important, before it succumbs to project implementation. However, these conventional methods of mitigation generally do not appropriately address the consequences to Native American cultural and religious concerns.

Some traditional mitigation strategies used by federal agencies could work with Native American issues, if those issues are tangible in nature. For example, a BLM proposal might be modified to allow for continuing traditional resource use by Native Americans, or that traditional use might be moved outside the area affected by the project, if the use by Native Americans is flexible. Access to a sacred site, as well as the site itself, may be closed to everyone but Native Americans for a certain time. Accommodating ceremonial use may mean assuring privacy. Both sides can be flexible in such cases. In contrast, the abstract, non-resource issues surrounding belief and practice are a much different matter. There is no appropriate mitigation that could be applied to something as intangible as a belief system.

Any protection afforded these special places requires that the federal land manager know where the places are so that protective measures can be implemented. This knowledge often becomes an issue in itself because the relationship between Native American tribes and the Federal Government has never caused Native Americans to want to reveal or entrust sacred concerns to federal officials. Because almost any action taken by this agency could affect both tangible and intangible Native American concerns in some way, it becomes BLM's responsibility to identify those concerns and deal with them appropriately. That situation would remain the same regardless of the management alternative chosen. A Memorandum of Understanding (MOU) between the BLM and the Paiute Indian Tribe of Utah was signed in 1998 and deals with coordination between the two entities, including outlining the coordination process, the tribal area of interest, types of projects the tribe is interested in, and the resolution of any issues that may arise during consultation. This MOU marks substantial progress towards the identification and resolution of these sensitive issues. The BLM proposes to enter into agreements, formally or informally, with all tribes interested in dealing with the RFO. This should make consultation efforts for the RFO both meaningful and productive. Any agreements which are developed could affect future management as Native American concerns are addressed.

Only two areas that have special significance to Native American tribes have been identified in the RFO to date: Quitchupah Canyon in Sevier and Emery Counties (held sacred by the Paiute Indian Tribe of Utah) and the Henry Mountains of Wayne and Garfield Counties (held sacred by the Navajo Nation). Other concerns to date have been restricted to smaller areas and individual cultural resource sites discovered during the normal field-inventory process. All these sites would be considered carefully in future project planning. Tribes would continue to be consulted about these resources and how they should be managed to eliminate or mitigate impacts.

Throughout the land use planning process, the BLM has consulted with several tribes. Information on this process is contained in Chapter 5. During consultation communications, issues and concerns were raised regarding many of the proposals discussed in this Proposed RMP. Other issues included the following:

- Generally, the tribes supported the conservation of all resources. The tribes would prefer to see all cultural sites left in their existing states and not be subjected to disturbance from any proposed action.

- Federal land managers should consider and be sensitive to Native American religious concerns and beliefs while implementing mandated multiple-use policies.

- Several tribes generally oppose oil, gas, and mineral development because digging up the earth for any reason negatively affects all living beings.

- Many Native Americans feel that OHV users are not meeting nature on its own terms and are thereby limiting the experience because of the introduction of the artificial OHV into natural settings. Some Native American concerns on OHVs include the following:
  - OHV use can cause considerable adverse effects to the natural and cultural resources.
  - OHV use can disturb, modify, or decrease vegetation cover, making areas more susceptible to flooding and erosion.
  - OHV use can result in vandalism to cultural resources. Those archaeological sites that remain in good condition are that way primarily because of their isolation and limited access. It has been demonstrated that increased access results in increased destruction of those cultural resources that are a very real part of Native American culture and religion.
  - The transportation plan must include a real commitment to law enforcement so that any claim that OHVs are limited to existing roads and trails has some meaning.

– OHV use on the public lands is regulated by EO and other regulations. EO 11644 specifies in Section 9 that if the agency determines that the use of OHVs will cause or is causing adverse effects on soil, wildlife, wildlife habitat, or cultural resources in certain areas or on certain trails, the agency will immediately close those areas and trails to OHV use until such time as the adverse impacts have been eliminated and measures have been implemented to prevent future recurrence.

- The FLPMA requires resources to be managed to best meet present and future needs of the American people. Several tribes tend to feel that current BLM public land management is placing undue emphasis on present needs with little thought being given to future needs or conditions. For example, the federal agencies need to consider how ecosystems will respond to the stresses of global climate change.

- The tribes favor ACEC protection of the relevant and important values found in many places on public lands, especially of cultural and water resources. They feel that all areas having these values should be designated or managed to protect those values.

Methods and Assumptions

To analyze the potential effects of the alternatives on archaeological and historical resources, information was gathered from inventories and excavations in and adjacent to the Planning Area. However, less than 1% of the RFO has been inventoried, and only a handful of excavations have been conducted. The analysis is also based on professional expertise of BLM specialists at the RFO, a review of the relevant scientific literature, and consultation with tribal governments and individual tribal members.

Effects are quantified where possible. In absence of quantitative data, best professional judgment was used. Impacts are sometimes described using ranges of potential impacts or in qualitative terms, if appropriate. The intensities of impacts are also described, where possible.

This analysis was based on the following assumptions:

- All laws for the management and protection of cultural resources would be followed, to the extent allowed by budget and available personnel.
- Section 106 inventories and mitigation would be conducted for all proposed projects, as required by NHPA, under each alternative.

- Cultural resources would continue to be discovered throughout the RFO.
- Some proactive Section 110 inventory, research, stabilization, or preservation would be accomplished in the Planning Area each year.
- NRHP-listed and some NRHP-eligible sites, as well as the cultural resources in the ACECs, would be monitored for vandalism and protected or stabilized, as necessary.
- All surface-disturbing activities include mitigation to reduce impacts to cultural resources. Analysis of impacts includes all mitigation.
- The demand for use of cultural resources, public use, scientific use, and traditional use would remain at current levels or increase slightly.
- As access to an area increases, incidental damage of cultural resources adjacent to the access route(s) would increase. Impacts from incidental damage would be reduced as distance from the access route increases.

Environmental Consequences

Impacts to cultural resources could result from actions proposed under the following resource management programs:

- Vegetation and Fire and Fuels Management
- Cultural Resources
- Visual Resources
- Non-WSA Lands with Wilderness Characteristics
- Forestry and Woodland Products
- Livestock Grazing
- Recreation
- Travel Management
- Lands and Realty
- Minerals and Energy
- Special Designations

Other programs were determined to have little or no impact on cultural resources.

Alternative N: No Action

Impacts from Vegetation and Fire and Fuels Management

Restoration activities under this alternative would continue to be implemented using a variety of treatment methods; impacts to cultural resources would vary by treatment method. Eradication of noxious weeds may involve surface disturbance, which also could impact cultural sites. Sites eligible for listing on the NRHP in these areas would continue to be avoided by any surface-disturbing activity. Mitigation of some impacts would be provided by following Section 106 procedures.

Wildland fire itself does not affect cultural resources in the same manner as surface-disturbing activities do. Impacts from fire vary based on the type of material that composes the cultural resources as well as the temperature and duration of exposure to fire. As a general rule, fire does not affect buried cultural materials. Studies show that even a few inches of soil cover (4 inches) are sufficient to protect cultural materials (Oster no date). Fires that burn hot and fast through a site may have less effect on certain types of cultural materials than do fires that smolder in the duff or burn for a long period of time, allowing heat from the fire to penetrate the surface. Determining temporal context is an important part of archaeology. Fire has the potential to adversely impact the dating potential of archaeological data obtained from both

organic and inorganic material (Deal no date, Buenger 2003, Lloyd et al. 2002, Shackley et al. 2002, Solomon 2002). The high heat from fire can and often does destroy the usefulness of datable deposits.

Prehistoric and historic resources potentially affected by fire may be inorganic (lithic, ceramics, cans, glass, rock art) or organic (basketry, wooden structures, dendroglyphs). Generally speaking, organic materials are more at risk because they tend to burn or alter at lower temperatures than do inorganic items. Fire impacts to inorganic cultural resources include fracturing, shattering, and changes in color and internal luster, all of which might reduce an artifact's ability to render information about the past. As a general rule, hotter temperatures and longer exposure to fire are more likely to affect lithic materials. When these materials are likely to be present, it may be necessary to take protective measures. Historic earthworks such as trails, roads, irrigation ditches, and canals are less sensitive to fire. Wildland fire could also impact rock art. Fire effects include soot smudging and discoloration from smoke, which obscure the rock art images; degradation of the rock surface from spalling, exfoliation, and increased weathering; changes in organic paints because of heat; and damage to rock varnish, which could destroy the varnish's potential to date the art (Tratebas 2004, Kelly and McCarthy 2001).

Emergency suppression activities often are underway before any resource-protection efforts are organized. Therefore, cultural resources may be inadvertently damaged. Fire-suppression activities may require use of heavy equipment that can directly impact cultural resources through surface disturbance. Wildland fires may destroy or alter cultural sites susceptible to damage from fire, heat, or smoke. Fire suppression activities overall would help to stop wildland fire and ultimately protect cultural resources that might be destroyed or damaged by fire. Therefore, impacts from fire and fuels management would be minor to moderate, considerably less in intensity than wildfires that would destroy wooden features and structures and damage rock art and surface features.

Emergency stabilization and rehabilitation (ESR) of burned areas would be subject to intensive cultural-resource inventories and Section 106 review. Significant cultural sites would be protected by these measures. The only unmitigated impacts would be to sites that do not meet the NRHP eligibility criteria.

Prescribed fires would be allowed across sites not vulnerable to destruction by fire, such as areas that have burned in the past. Areas excluded from fire treatment would be rock art, wooden structures or features, and any area vulnerable to the indirect effects of subsequent erosion.

Mechanical treatments require the use of heavy equipment. As described previously, use of heavy equipment can directly impact cultural resources through surface disturbance and direct destruction of artifacts and features. Biological treatments would have no direct impacts on cultural resources because the biological agent targets the vegetation species treated. Manual treatments would have minimal effects on cultural resources because all treatment is done by hand, with no use of heavy equipment.

Riparian invasive and exotic species removal could occur in some riparian areas and may directly impact archaeological and historical resources. However, treatment efforts would help to stop the root damage and erosion of deposits and structures caused by invasive species and would help to keep archaeological and historical resources intact. Mitigation associated with compliance with NEPA and NHPA would help to redesign projects so that sites would be avoided or measures would be taken to protect these resources.

Vegetation treatments would have indirect impacts on cultural resources because of increased erosion and displacement and destruction of surface artifacts and, in some cases, destruction of surface and buried structures and features. Overall impacts from vegetation management would result in direct and indirect impacts to cultural resources. These impacts could be partially mitigated during compliance with NEPA and Section 106 of NHPA. Projects would be redesigned to avoid historic properties or those eligible for or listed on the NRHP, thus mitigating some of the direct and indirect impacts.

These impacts to cultural resources would also apply to resources of importance to Native Americans. Also, restoration, including fire and fuels management, could increase some native vegetation important to Native Americans. Historically (prior to the arrival of Euro-Americans), Native Americans burned areas in the RFO to encourage growth of native plants, as well as for other reasons. Restoration efforts benefit some types of native vegetation and provide additional locations for Native Americans to collect such vegetation. Impacts from all vegetation treatments, including fire and fuels management, on resources of importance to Native Americans would be moderate. Traditional uses of and access to resources would continue and would be sustainable.

Impacts from Cultural Resources

Under Alternative N, present management would continue and there would be no site use allocation and no priority areas for new field inventories. Cultural resources would be managed in compliance with laws and regulations, and this management usually would be addressed only if and when a given site was threatened by a surface-disturbing activity. Cultural inventories, documentation, research, protective measures, and monitoring would continue to provide information about the past in the RFO and to protect cultural resource sites.

Impacts from Visual Resources

VRM Classes I and II would help protect cultural resource sites and landscapes from visual intrusions and surface disturbance; however, such categories could also limit research excavations. Under Alternative N, none of the lands managed by the RFO are classified as VRM Class I; 529,500 acres (25%) would be managed as VRM Class II. Major modifications to the visual landscape could be allowed on 1,029,500 acres (48% of the RFO) managed as VRM Class IV. These impacts may also apply to TCPs and the landscapes associated with them, although any impacts would be subject to Section 106 compliance.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under Alternative N, resulting in no additional protection for cultural resources.

Impacts from Forestry and Woodland Products

Alternative N allows for harvesting of forest and woodland products across most of the RFO (all areas, outside of WSAs, on a case-by-case basis). Forest and woodland harvest could have potential inadvertent impacts to cultural resources from the cross-country driving and surface disturbance associated with woodcutting and timber harvest activities. Commercial timber harvesting would be allowed only on a case-by-case basis west of Capitol Reef National Park, subject to compliance with NEPA and Section 106 of NHPA. Projects would be redesigned to avoid historic properties or those eligible for or listed on the NRHP, thus mitigating some of the direct and indirect impacts. It is important to note that not all areas open to woodland-products use contain actual woodlands that would be targeted for use. As such, the actual acres on which this activity would occur is expected to be much less than the total amount of lands open for this use, which could result in localized areas in which impacts to cultural resources would occur but minor impacts overall. Woodland harvest would also result in long-term benefits to traditional cultural practices of Native Americans in the RFO.

Impacts from Livestock Grazing

Under this alternative, 138,952 acres would continue to be unavailable to livestock grazing; 1,989,048 acres would continue to be available to grazing. The dispersed nature of livestock grazing can cause disturbance by livestock that is spread lightly over large areas, in most cases. In areas in which livestock congregate and trail, cultural resource sites could be impacted by short-term removal of protective vegetation cover, increased soil compaction, and some mixing of artifacts and contextual relationships. These types of impacts would be site-specific and localized. Adherence to *Fundamentals of Rangeland*

Health and *Standards and Guidelines for Grazing Administration* would result in mitigation of these possible impacts and a decrease in potential erosion and trampling. Impacts on specific areas would be identified and mitigated through the grazing-permit administration process. With mitigation, these impacts would likely be relatively minimal. Changes to grazing management could be subject to adherence of Section 106 of NHPA, which would mitigate impacts to cultural resources and resources of importance to Native Americans.

Impacts from Recreation

Visitor use is expected to increase throughout the RFO. Under this alternative, the entire RFO (with the exception of Yuba Reservoir, which is managed by the Fillmore FO) is identified and managed as an ERMA. Management of recreation in ERMAs is restricted to custodial actions only, with no special prescriptions identified. OHV use in particular could lead to inadvertent damage to cultural sites, as well as collection of artifacts and vandalism of sites because of ease of access across a large portion of the RFO.

Development of recreation facilities would increase the potential for the identification of cultural resources during inventories before development. In addition, providing developed sites in a few areas of high recreation use would reduce the potential for unmitigated impacts from dispersed recreation. However, there would be a potential for significant cultural resource impacts at non-developed recreation sites. Although use would be dispersed over a larger area, reducing the magnitude of impact, non-developed recreation sites usually do not have cultural resource inventories and clearances before being established.

Impacts from non-developed recreation would be mitigated on a case-by-case basis when discovered. Cultural sites adjacent to developed recreation sites could be impacted because of inadvertent damage from uninformed or unaware recreationists. The use of signs, trails, and facilities would reduce inadvertent damage to cultural resources. Limited management at popular dispersed use areas would continue to result in concentrated recreation use, which could increase the potential for inadvertent damage of cultural sites.

More public land users and more intense recreational use on public lands near the communities would result in direct and indirect impacts to cultural resources. Impacts in some specific areas near communities or on some types of archaeological sites, such as caves, rock shelters, or rock art, could be moderate or major. Visitors conducting activities under special recreation permits would be educated about the provisions of the Archaeological Resources Protection Act (ARPA) and Native American Graves Protection and Repatriation Act (NAGPRA), which would help protect cultural resource sites.

These same impacts would also apply to resources of importance to Native Americans, with the exception that additional recreational use could interfere with traditional uses in some areas.

Impacts from Travel Management

Impacts to cultural resources primarily stem from management actions that restrict or increase access. Increased access to cultural sites could increase contact by visitors who could intentionally damage sites by collecting surface artifacts, vandalizing, illegally digging, or otherwise excavating the sites. Visitors could also unintentionally damage sites by camping or driving across them. Reducing such access by closing roads or restricting travel could thus protect cultural resources. However, increased access could allow for the increased presence of law enforcement, cultural resource personnel, and site stewards for purposes of monitoring sites and areas. Increasing access could also increase the amount of cultural resource inventories and research, by decreasing the cost of excavation, inventory, or recording. Finally, increased access would allow for the increased presence of the public, which could also deter vandalism. This possibility is suggested by recent ARPA cases in southern Utah, showing that pothunters in the area

tend to select isolated sites to excavate without getting caught. As a result, more and more pothunters in the area are using OHVs or 4-wheel drive vehicles to access and vandalize sites in roadless areas.

Under Alternative N, 1,636,400 acres (77%) of the RFO would be open to motorized vehicles, allowing unlimited access to the majority of the RFO. Allowing cross-country OHV use could generally impact surface features, break artifacts, and otherwise disturb cultural resources at the surface. It could also result in the pioneering of new routes, increasing motorized access throughout these acres and increasing incidental damage to cultural sites. Unlike other permitted uses, cultural resource inventories and mitigation strategies would not be implemented before designating these large areas open to cross-country OHV use. Mitigation of cultural resource impacts would be implemented on a case-by-case basis after the impact has occurred. Mitigation would occur only in situations in which impacted properties retain qualities that make them eligible for inclusion in the NRHP.

Alternative N would limit motorized vehicles to existing, designated, and maintained routes on 277,600 acres (13% of the RFO); 214,000 acres (10% of the RFO) would be closed to motorized vehicle use, thereby limiting direct and indirect impacts associated with vehicle use on or near sites. The public would have access to 4,315 miles of unpaved routes in the RFO, which could allow continued access for vandalism of cultural resources.

Among the alternatives, Alternative N would have the greatest adverse impacts to cultural resources because of the large amount of lands open to cross-country motorized use.

Impacts from Lands and Realty

Land disposals would impact cultural resources because the disposed lands and associated resources would lose the protection provided by federal laws. Impacts would be direct and long term, depending on the location of the lands to be disposed and the nature of the cultural resources on them. Retaining significant cultural sites in federal ownership and acquiring non-federal lands with significant cultural sites would provide protection to these sites.

Any new land use authorizations (e.g., ROWs, permits, leases, easements) would cause direct and indirect long-term impacts to cultural resources and would be mitigated under NEPA and Section 106 of NHPA. Under this alternative, all ACECs (14,780 acres), eligible WSR corridors (12 segments—135 miles), areas closed to leasing (459,700 acres), and areas open to leasing subject to major constraints (NSO) (22,600 acres) would be managed as ROW avoidance areas (with exceptions granted only when the proposed authorization would not create substantial surface disturbance or would create only temporary impacts). Thus, impacts to cultural resources in these avoidance areas would be negligible.

Impacts from Minerals and Energy

Cultural resource values on 1,236,500 acres (58% of the RFO) open to leasing subject to the standard terms and conditions and on 409,200 acres (19% of the RFO) open to leasing subject to moderate constraints (TL, CSU) could be impacted by oil and gas leasing. Cultural site densities throughout the RFO, although varying in different areas, are low enough to provide for the identification and avoidance of cultural sites when lessees exercise initial development rights associated with oil and gas leases. Based on the Reasonably Foreseeable Development (RFD), oil and gas developments within these areas could impact 8,180 acres during the next 15 years (Appendix 12). Oil and gas development on these acres would include surface disturbance on an average of between 2 and 4 acres per drill pad (depending on RFD Area) and between 2 and 5 miles of road per drill pad (depending on RFD Area), with an average of 4 acres of surface disturbance per mile of road (Appendix 12). All developments on these acres would typically be subject to Class III cultural resource inventories and evaluation on a project-by-project basis prior to allowing the disturbance, whether road construction or well pad development. This requirement would likely result in the identification of cultural sites in these areas. Site densities throughout the RFO

would generally result in the identification and avoidance of cultural sites during construction activities associated with development. However, surface disturbance associated with oil and gas development in areas of very high cultural-site density could result in the identification of sites that are unavoidable to mineral development. Sites that are unavoidable would be mitigated, resulting in the physical alteration or elimination of sites as they are mitigated through data recovery or other onsite means.

Managing 1,668,300 acres (78% of the RFO) as open to some category of oil and gas leasing could result in surface disturbance caused by seismic operations that support exploration on oil and gas leases. Potential oil and gas leasing categories include the following: open to leasing subject to the standard terms and conditions, open to leasing subject to moderate constraints (TL, CSU), and open to leasing subject to major constraints (NSO) This would likely result in the identification of cultural sites in these areas. Upon identification, seismic operations should be able to avoid all the identified sites.

Alternative N allows sale of mineral materials (salable minerals) on 1,668,300 acres (78% of the RFO). Existing areas of salable mineral disposals have already been substantially impacted—any cultural resources present have likely been significantly altered or destroyed, resulting in loss of information. However, new sites would be subject to Section 106 procedures, which would either protect the site through avoidance or would result in mitigation (scientific data-recovery methods such as recordation, surface collection, subsurface testing, and excavation).

Under Alternative N, 459,700 acres would be closed to leasing and closed to disposal of salable minerals; 169,480 acres would continue to be withdrawn from mineral entry. Closing or withdrawing areas from mineral operations would prevent impacts that these types of activities could cause to cultural resources.

Impacts from Special Designations

Wilderness Study Areas

WSAs are managed under the IMP criteria until Congress either designates an area as wilderness or releases it from further consideration. This management effectively provides protection to the cultural resources in those areas by limiting motorized access and nearly all activities that could adversely affect archaeological and historic sites. However, this management also affects research proposals and activities at sites within WSAs. Anything that would not comply with the IMP (e.g., anything that would impair the suitability of such areas for preservation as wilderness) would not be authorized.

Wild and Scenic Rivers

Protecting the outstandingly remarkable values of the eligible WSRs would help protect cultural resources by preventing ground-disturbing activities in the river corridors. All eligible segments (12 segments—135 miles) would be managed to protect their outstandingly remarkable values, free-flowing nature, and tentative classification under Alternative N. This management would benefit cultural resources by limiting ground disturbance in these areas.

The Dirty Devil, No Mans Mesa, Robbers Roost Canyon, Fish Creek and Quitchupah Creek segments have cultural as outstandingly remarkable values. However, these segments will not be designated as suitable for further consideration in the NWSRS. The cultural resource outstandingly remarkable values for these river segments will continue to be protected under other resource management decisions. WSR management decisions will not impact cultural resources on these river segments.

The Maidenwater Creek, Fremont Gorge, Sams Mesa, Twin Corral Box Canyon, Larry Canyon and Beaver Wash segments do not contain cultural resources as part o the outstandingly remarkable values. Management decisions that would continue to protect their outstandingly remarkable values may also

benefit cultural resources. Since these river segments would not be designated as suitable, there are no WSR management decisions that would impact cultural resources.

Areas of Critical Environmental Concern

Although ACEC designation alone does not necessarily provide protection, management actions included in ACECs are often more restrictive, thus indirectly providing protection for cultural resources. Protections associated with ACEC designation that would affect cultural resources include managing oil and gas leasing as closed to leasing or open to leasing subject to moderate constraints (NSO); managing more areas under restrictive VRM designations; restricting livestock grazing; and limiting travel. Alternative N continues the designation of four ACECs (14,780 acres). Allowing no uses that would cause irreparable damage to the relevant and important values in these areas would reduce surface disturbing activities within those areas, protecting cultural resources. Such restrictions could include closing to OHV use; managing as either closed to leasing or open to leasing subject to moderate constraints (NSO), depending on the ACEC; managing as unavailable for livestock grazing in three of the four ACECs; and acquiring inholdings.

Alternative A

Impacts from Vegetation and Fire and Fuels Management

The types of impacts experienced as a result of vegetation and fire and fuels management would be similar to those described under Alternative N However, under Alternative A, maximum treatment acreage limits would be set (averaging 73,600 annually for all treatments). Although no maximum treatment acreage limits would be set under Alternative N, it is likely that more acres would actually be treated under that alternative because the 2005 Land Use Plan Amendment for Fire and Fuels Management allows for the full range of fire and fuels management actions to achieve ecosystem sustainability. Alternative N allows for treatment of vegetation (including mechanical, wildland fire use and/or prescribed fire, and chemical methods). Alternative A incorporates more mechanical treatment than do Alternative N or the Proposed RMP. Mechanical treatments require the use of heavy equipment. As described previously, use of heavy equipment can directly impact cultural resources by causing surface disturbance and direct destruction of artifacts and features.

Impacts from Cultural Resources

Allocating and managing cultural resource sites to one of six uses would result in the sites being proactively managed compared to Alternative N and considering cultural resource sites' varied values. These six uses are as follows: scientific, conservation, traditional, public, experimental, or discharged from management. Under Alternative A, most cultural sites would be managed for public use, thereby providing opportunities to educate the public about past human activities within the RFO. This type of site management would require extensive inventories and other research so that the sites could be interpreted for the public. However, designated public use sites could also lead to damage and vandalism at or near the sites.

Monitoring of identified cultural sites with known impacts, as well as of sites that are sensitive to incidental impacts, would indicate whether management actions would be needed to protect the sites, thus decreasing the potential for losing cultural values because of deterioration and impact. The prioritization for new non-Section 106 inventories in the Horseshoe Canyon South area would result in the identification of cultural resources and sites, which in turn would increase the knowledge base on the Archaic period occupation of Utah and would provide for improved management of these resources.

Impacts to cultural landscapes eligible for the NRHP would be considered through adherence to federal regulations. This management could protect the cultural characteristics of the landscapes. However, activities could be permitted that could result in the degradation or loss of landscape characteristics.

Impacts from Visual Resources

The types of impacts experienced as a result of VRM would be similar to those described under Alternative N. Under Alternative A, 446,900 acres (21% of the lands managed by the RFO) would be designated as VRM Class I; 0 acres would be designated as VRM Class II; 392,800 acres (18%) would be designated as VRM Class III; and 1,288,300 acres (61%) would be designated as VRM Class IV. Designating the majority of the RFO as VRM Class III or IV could result in large areas of moderate-to-major modifications in the existing character of the landscape, with accompanying surface disturbance and potential inadvertent damage to cultural resources. These areas would still be subject to Section 106 procedures prior to the surface-disturbing activity, thereby increasing discovery of sites and providing protection (through site avoidance) or increased knowledge (through data recovery).

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under Alternative A, resulting in no additional protection for cultural resources.

Impacts from Forestry and Woodland Products

Impacts from harvesting of forest and woodland products would be the same as those described for Alternative N. However, Alternative A allows for harvesting of forest and woodland products across more of the RFO (all areas, outside of WSAs, when sustainable and compatible with restoring, maintaining, or improving forest health). Thus, forest and woodland products harvest would be subject to compliance with NEPA and Section 106 of NHPA. Projects would be redesigned to avoid historic properties or those eligible for or listed on the NRHP, thus mitigating some of the direct and indirect impacts. It is important to note that not all areas open to woodland products use contain actual woodlands that would be targeted for use. As such, the actual acres on which this activity would occur is expected to be much less than the total amount of lands open for this use. The result could be localized areas in which impacts to cultural resources would occur but minor impacts overall. Woodland harvest would also result in long-term benefits to traditional cultural practices of Native Americans in the RFO.

Impacts from Livestock Grazing

Impacts caused by livestock grazing would be the same as those described for Alternative N. However, under Alternative A, an additional 36,950 acres would be available for grazing. Thus, impacts to cultural resources could occur over a slightly larger area under Alternative A.

Impacts from Recreation

The establishment of and management associated with SRMAs would provide for management at popular recreation use areas. Management of these areas would decrease the potential for inadvertent damage of cultural sites, compared to Alternative N.

Under Alternative A, five SRMAs (514,500 acres) would be established to manage recreational use and to mitigate impacts caused by this use, such as uncontrolled camping, parking, and other activities. This management would decrease the potential for inadvertent damage of cultural sites as compared to Alternative N. Limiting OHV use in the Otter Creek Reservoir SRMA to designated routes would limit the extent of potential impacts to cultural resources.

The construction of recreation facilities in the Big Rock SRMA and the Sahara Sands SRMA would focus recreation use, minimizing long-term impacts. This focus would also decrease the potential for inadvertent damage of cultural sites as compared to Alternative N. Managing the Dirty Devil/Robbers Roost SRMA (290,000 acres) for primitive and semi-primitive recreation would reduce the potential for damage to cultural resources, by limiting OHV recreation use to designated routes. Managing the Factory Butte SRMA (199,700 acres) for a motorized recreational opportunity and allowing moderate-to-

extensive landscape modification would have potentially major impacts and would result in continued impacts to cultural resources. However, this area is receiving heavy motorized use currently, so sites are likely already damaged.

Alternative A would allow vehicles to pull off of designated routes (outside WSAs) 100 feet to either side of centerline (for parking or staging) and 300 feet to either side of centerline (for camping). This could result in vehicles generally impacting surface features, breaking artifacts, and otherwise disturbing cultural resources at the surface.

Impacts from Travel Management

The types of impacts experienced as a result of travel management would be similar to those described under Alternative N. However, Alternative A designates substantially fewer areas (449,000 acres, or 21% of the RFO) as open to motorized vehicles. Motor vehicles would be limited to designated routes on 1,679,000 acres (79%) of the RFO; 0 acres would be closed to motorized vehicle use. The amount of open areas, although greatly reduced, compared to Alternative N, would still result in impacts to cultural resources from vehicle use in those areas. However, the potential for new impacts to cultural resources is low because these areas have been subject to disturbance from cross-country use during recent years. Continued use of OHVs would not be expected to cause additional adverse impacts.

The remainder of the RFO would limit motorized use to designated routes—the public would have access to 4,312 miles of unpaved routes (slightly more than under Alternative N), resulting in the potential for inadvertent damage to cultural resources along those routes. There would be 68 miles of routes closed, resulting in less potential for damage to cultural resources in those areas. No areas would be closed to motorized use, with no accompanying benefits to cultural resources.

Impacts from Lands and Realty

Impacts from land tenure adjustments would be the same as those described under Alternative N.

The types of impacts experienced as a result of withdrawals would be similar to those described under Alternative N, except that fewer acres would be recommended for withdrawal (154,700 acres under Alternative A). Thus, unavoidable impacts to cultural resources from minerals activities would be greater under Alternative A than under Alternative N, although sites that are unavoidable would be mitigated.

The types of impacts experienced as a result of land use authorizations would be similar to those described under Alternative N, except that under Alternative A there are fewer ROW avoidance areas because Section 106 of NHPA would need to be adhered to for all actions undertaken by BLM, impacts to cultural resources would be negligible.

Impacts from Minerals and Energy

The types of impacts experienced as a result of minerals and energy management would be similar to those described under Alternative N. Managing 1,681,100 acres (79% of the RFO) as open to various categories of oil and gas leasing could result in surface disturbance from seismic operations that support oil and gas leases. Oil and gas leasing categories include the following: open to leasing subject to the standard terms and conditions, open to leasing subject to moderate constraints (TL, CSU), and open to oil and gas leasing subject to major constraints (NSO). This management would likely result in the identification of cultural sites in these areas. Upon identification, seismic operations should be able to avoid all the identified sites.

Alternative A allows sale of mineral materials (salable minerals) on 1,681,100 acres (79% of the RFO). Existing areas of salable mineral disposals have already been substantially impacted—any cultural

resources present have likely been significantly altered or destroyed, resulting in loss of information. New sites would be subject to Section 106 procedures, which would either protect the site through avoidance or result in mitigation (scientific data recovery methods such as recordation, surface collection, subsurface testing, and excavation).

Under Alternative A, 446,900 acres would be closed to leasing and closed to disposal of salable minerals; 154,700 acres would continue to be withdrawn from mineral entry. Closing or withdrawing areas from mineral operations would prevent impacts that these types of activities could cause to cultural resources.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Under Alternative A, no eligible river segments would be recommended as suitable, and no special management to protect the outstandingly remarkable values of these rivers would be provided. Thus, the potential for inadvertent damage to cultural resources from surface-disturbing activities would be greatest under this alternative. However, most of the eligible river segments (98 of the 135 miles total) are also within WSAs, which would provide protection for cultural resources by limiting surface disturbance in those areas.

Areas of Critical Environmental Concern

Under Alternative A, no areas would be designated as ACECs. Providing no special management prescriptions would allow surface-disturbing activities within those areas that could result in inadvertent damage to cultural resources

Proposed RMP

Impacts from Vegetation and Fire and Fuels Management

Impacts would be the same as those described under Alternative A.

Impacts from Cultural Resources

Impacts would be less than those described for Alternative A. Fewer sites would be allocated to public use under the Proposed RMP, and more sites would be managed for their information potential and scientific use and would be made available for scientific study. This scientific use category would be applied almost exclusively to prehistoric archaeological sites; most historic sites with ranching/homestead structures would remain in the public use category. The amount of new field inventory necessary under the Proposed RMP would be far lower than under Alternative A because many more site types would be managed for scientific use under the Proposed RMP. The majority of sites would be preserved for scientific study, which would decrease public access to cultural sites and decrease the likelihood of inadvertent damage or vandalism to these resources. In addition, the prioritization for new field inventories in the Horseshoe Canyon, Trough Hollow, Bull Creek, and other areas of special cultural significance would increase the cultural knowledge base in these areas, while providing for improved management of these resources.

Impacts from Visual Resources

The types of impacts experienced as a result of VRM decisions would be similar to those described under Alternative N. Under the Proposed RMP, 446,900 acres (21% of the lands managed by the RFO) would be designated as VRM Class I; 249,800 acres (12%) would be designated as VRM Class II; 393,100 acres (18%) would be designated as VRM Class III; and 1,038,200 acres (49%) would be designated as VRM

Class IV. The majority of the RFO would be designated as VRM Class III or IV, which could result in large areas of moderate-to-major modifications in the existing character of the landscape, with accompanying surface disturbance and potential inadvertent damage to cultural resources. However, less of the RFO would be designated in these VRM classes than in Alternative N or A, resulting in less potential impacts to cultural resources, compared to those alternatives.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under the Proposed RMP, 78,600 acres would be managed to maintain wilderness characteristics. Management actions would include minimizing or avoiding surface-disturbing activities. Such actions would include designating the areas as open to leasing subject to major constraints (NSO), limiting motorized uses to designated routes, and designating the areas as VRM Class II. The emphasis on naturalness and a lack of surface-disturbing activities within these areas would minimize impacts to cultural resources because there would be limited or no vehicular activity or other forms of disturbance that could affect cultural sites. Protection of wilderness characteristics lands can restrict methods of archaeological site excavations or research activities during which surface-disturbing activities would occur. However, resource inventories would not be precluded, and information gathered from these inventories would increase knowledge of cultural resources.

Impacts from Forestry and Woodland Products

The types of impacts experienced as a result of forestry and woodland products management would be similar to Alternative A. However, more lands would be closed to this type of use under the Proposed RMP (one WSR segment—5 miles, compared to zero segments under Alternative N), resulting in less potential impacts to cultural resources.

Traditional cultural practices would not be affected because Native American collection of woodland products in riparian areas (outside of WSAs) for traditional purposes would be allowed.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

The types of impacts experienced as a result of recreation management would be similar to those described under Alternative A. However, the Proposed RMP would establish five SRMAs (860,390 acres) to manage recreational use and to mitigate impacts caused by this use, such as uncontrolled camping, parking, and other activities. The Proposed RMP proposes only 24,400 acres at Factory Butte and 90 acres at Big Rocks as OHV SRMAs, thus decreasing the potential for inadvertent damage of cultural sites, compared to Alternative A.

The Proposed RMP would allow vehicles to pull off of designated routes (outside WSAs) 50 feet to either side of centerline (for parking/staging) and 150 feet to either side of centerline (for camping). Although this could result in vehicles generally impacting surface features, breaking artifacts, and otherwise disturbing cultural resources at the surface, the area of potential impact would be less than under either Alternative N or A.

Impacts from Travel Management

The impacts experienced as a result of travel management would be less than those described under Alternative N. However, the Proposed RMP would designate only 9,890 acres (less than 1% of the RFO) as open to motorized vehicles; would limit motor vehicles to designated routes on 1,908,210 acres (90% of the RFO); and would close 209,900 acres (10% of the RFO) to motorized vehicle use. OHV use in open areas, although greatly reduced, compared to Alternative N, would still result in impacts to cultural

resources from vehicle use in those areas. The remainder of the RFO would limit motorized use to designated routes. The public would have access to 4,277 miles of unpaved routes; 345 miles of routes would be closed, resulting in less potential for damage to cultural resources in those areas.

Impacts from Lands and Realty

Impacts from land tenure adjustments would be the same as those described under Alternative N.

The types of impacts experienced as a result of withdrawals would be similar to those described under Alternative N, except that more acres (176,200 acres) would be recommended for withdrawal under the Proposed RMP. Thus, unavoidable impacts to cultural resources from minerals activities would be less under the Proposed RMP than under Alternative N.

The types of impacts experienced as a result of land use authorizations would be similar to those described under Alternative N, except that fewer ROW avoidance areas are proposed under the Proposed RMP. Because Section 106 of NHPA would need to be adhered to for all actions undertaken by BLM, impacts to cultural resources would be negligible.

Impacts from Minerals and Energy

The types of impacts experienced as a result of minerals and energy would be similar to those described under Alternative N. A similar acreage (1,680,700 acres, or 79% of the RFO) would be open to some category of oil and gas leasing, which could result in surface disturbance caused by seismic operations that support oil and gas leases. (The potential categories are as follows: open to leasing subject to the standard terms and conditions, open to leasing subject to moderate constraints [TL, CSU], and open to leasing subject to major constraints [NSO]). This would action would likely result in the identification of cultural sites in these areas. Upon identification, seismic operations should be able to avoid all the identified sites.

The Proposed RMP also allows the sale of mineral materials (salable minerals) on (1,680,700 acres, or 79% of the RFO). Existing areas of salable mineral disposals have already been substantially impacted—any cultural resources present probably have been significantly altered or destroyed, resulting in loss of information. However, new sites would be subject to Section 106 procedures, which would either protect the site through avoidance or result in mitigation (scientific data recovery methods such as recordation, surface collection, subsurface testing, and excavation).

Under this alternative, 447,300 acres would be closed to leasing and 601,800 acres would be closed to disposal of salable minerals; 176,200 acres would be recommended for withdrawal from mineral entry. Closing or withdrawing areas from mineral operations would prevent impacts that these types of activities could cause to cultural resources.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Protecting the outstandingly remarkable values of suitable WSRs would help protect cultural resources by preventing ground-disturbing activities in the river corridors. Under the Proposed RMP, one suitable segment, The Fremont Gorge (5 miles), would be managed to protect its outstandingly remarkable values, free-flowing nature, and tentative classification. This management would protect cultural resources from inadvertent damage, by limiting ground-disturbance in this area. The Proposed RMP would recommend one more suitable river segment than would Alternative A but would recommend fewer segments than

under Alternative C or D. Of the remaining segments, not being carried forward in the Proposed RMP, 98 miles are within WSAs, leaving 32 miles on which ground-disturbing activities could inadvertently impact cultural resources. The Proposed RMP would provide less protection to cultural resources through WSR decisions than would Alternative N, C, or D but more than would Alternative A.

Areas of Critical Environmental Concern

The Proposed RMP designates two ACECs (2,530 acres). Allowing no uses that would cause irreparable damage to the relevant and important values in these areas would reduce surface-disturbing activities within those areas, thereby providing protection to cultural resources from inadvertent damage. Disallowed uses would include the following: closing the area to OHV use; managing the area as open to leasing subject to major constraints [NSO], depending on the ACEC; making the area unavailable for livestock grazing; and acquiring inholdings.

Alternative C

Impacts from Vegetation and Fire and Fuels Management

The types of impacts experienced as a result of vegetation and fire and fuels management would be similar to those described under Alternative A. However, under Alternative C, fewer acres would be treated annually (averaging 26,000 annually for all treatments). In addition, this alternative proposes using only methods that mimic natural processes (fire and biological treatment methods) to manage vegetation. Such treatments could be less effective than conventional vegetation treatments and would not be effective in all vegetation communities. The treatments could result in the loss of existing vegetation cover, indirectly increasing erosion. Thus, impacts to soils under Alternative C would likely result in reduced short-term impacts (altered vegetation structure and increased local erosion and sedimentation rates) compared to the Proposed RMP, as well as reduced long-term impacts (improved vegetative cover and increased plant diversity, thereby stabilizing soil, improving overall watershed function and condition, and allowing greater infiltration and soil moisture storage).

Impacts from Cultural Resources

Impacts would be similar to those described for the Proposed RMP. However, under Alternative C, most site types would be allocated to conservation use, resulting in a decrease in opportunities for research and a decrease in the level of management involvement. Allocating most site types to conservation use would preserve the sites in the long term, making them available for future use. In addition, the prioritization for new field inventories in the Horseshoe Canyon, Trough Hollow, Bull Creek, and other areas of special cultural significance would increase the cultural knowledge base in these areas and would provide for improved management of these resources. Advertising archaeological sites and resources could increase visitation, which may result in trampling, creation of trails and removal of vegetation which would increase erosion and damage to sites. The increase in visitation could require additional monitoring of archaeological resources to identify and address impacts. Increased visitation could also denigrate the values Native Americans have for the area.

Impacts from Visual Resources

The types of impacts experienced as a result of VRM decisions would be similar to those described under Alternative N. Under Alternative C, 446,900 acres (21% of the lands managed by the RFO) would be designated as VRM Class I; 230,600 acres (11%) would be designated as VRM Class II; 509,100 acres (24%) would be designated as VRM Class III; and 941,400 acres (44%) would be managed as VRM Class IV. Although the majority of the RFO would be designated as VRM Class III or IV, less of the RFO would be designated in VRM Class IV (which allows major modifications to the existing character of the landscape) than in Alternative N or A or the Proposed RMP, resulting in less potential for inadvertent damage to cultural resources.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under Alternative C, resulting in no additional protection for cultural resources.

Impacts from Forestry and Woodland Products

The types of impacts experienced as a result of forestry and woodlands management would be similar to the Proposed RMP, although more lands (12 WSR segments—135 miles) would be closed to this type of use under Alternative C. Thus, the potential for localized surface disturbance to cultural resources would be less under Alternative C than under the Proposed RMP.

Traditional cultural practices would not be affected because Native American collection of woodland products in riparian areas (outside of WSAs) for traditional purposes would be allowed.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

The types of impacts experienced as a result of recreation management would be similar to those described for Alternative A, except that four SRMAs (930,000 acres) would be established to manage recreational use and to mitigate impacts caused by this use, such as uncontrolled camping, parking, and other activities. No SRMAs would be established for OHV use under Alternative C, thereby decreasing the potential for the damage that this type of use could cause to cultural resources.

Managing the Dirty Devil/Robbers Roost SRMA (375,800 acres) for dispersed recreation in a primitive setting would indirectly reduce the potential for recreation to cause surface disturbance (and associated damage to cultural resources). Managing the Henry Mountains SRMA (533,900 acres) for primitive and semi-primitive recreation and managing the Sevier Canyon SRMA (7,500 acres) for scenic values would indirectly maintain or reduce the potential for disturbance and damage to cultural resources. Managing the Capitol Reef Gateway SRMA (12,800 acres) for a natural recreation experience and the development of facilities could have localized, site-specific impacts, although Section 106 procedures would be adhered to prior to construction of any facilities.

Alternative C allows vehicles to pull off of designated routes (outside WSAs) 25 feet to either side of centerline (for parking/staging); camping would be allowed only in designated campsites, with travel between campsites allowed only on designated routes. Together, these restrictions would minimize disturbance to cultural resources and would result in less disturbance to these resources than would Alternative N or A or the Proposed RMP.

Impacts from Travel Management

The types of impacts experienced as a result of travel management would be similar to those described under the Proposed RMP. However, Alternative C designates no areas as open to motorized vehicles; motor vehicles would be limited to designated routes on 1,445,000 acres (68%) of the RFO; and 683,000 acres (32%) would be closed to motorized vehicle use. The lack of open areas would eliminate impacts (breaking artifacts and disturbing/damaging surface features) that vehicle use in those areas could cause to cultural resources. Limiting motorized use to designated routes—the public would have access to 3,192 miles of unpaved routes—would generally limit cultural resource impacts to areas in the immediate vicinity of the designated route; 1,188 miles of routes would be closed, resulting in less potential for damage to cultural resources in those areas.

Impacts from Lands and Realty

Impacts from land tenure adjustments would be the same as those described under Alternative N.

The types of impacts experienced as a result of withdrawals would be similar to those described under Alternative N, except that more acres (331,100 acres) would be recommended for withdrawal under Alternative C. Thus, unavoidable impacts that minerals activities would cause to cultural resources would be less under Alternative C than under Alternative N.

The types of impacts experienced as a result of land use authorizations would be similar to those described under Alternative N. However, more ROW avoidance areas are proposed under Alternative C (735,000 acres closed to leasing or open to leasing subject to major constraints [NSO], 12 suitable WSR segments, and 16 ACECs). Because Section 106 of NHPA would need to be adhered to for all actions undertaken by BLM, impacts to cultural resources would be negligible.

Impacts from Minerals and Energy

The types of impacts experienced as a result of minerals and energy would be similar to those described under Alternative N because a similar number of acres (1,541,700 acres, or 72% of the RFO) would be open to oil and gas leasing (open to leasing subject to the standard terms and conditions, open to leasing subject to moderate constraints [TL, CSU], and open to oil and gas leasing subject to major constraints [NSO]). Such leasing could result in surface disturbance caused by seismic operations that supporting oil and gas leases, likely resulting in the identification of cultural sites in these areas. Upon identification, seismic operations should be able to avoid all the identified sites.

Alternative C allows sale of mineral materials (salable minerals) on 1,541,700 acres (72% of the RFO). Existing areas of salable mineral disposals have already been substantially impacted—any cultural resources present probably have been significantly altered or destroyed, resulting in loss of information. However, new sites would be subject to Section 106 procedures, which would either protect the site through avoidance or result in mitigation (scientific data recovery methods such as recordation, surface collection, subsurface testing, and excavation).

Under this alternative, 586,300 acres would be closed to leasing and closed to disposal of salable minerals; 331,100 acres would be recommended for withdrawal from mineral entry. Closing or withdrawing areas from mineral operations would prevent impacts to cultural resources from these types of activities. Alternative C proposes more acres of mineral withdrawals and more areas closed leasing or to disposal of salable minerals than does Alternative N or A or the Proposed RMP. Therefore, Alternative C would preclude mineral and energy development in those areas and thus provide more protection to cultural resources.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Protecting the outstandingly remarkable values of suitable WSRs would help protect cultural resources by preventing ground-disturbing activities in the river corridors. Under Alternative C, all 12 suitable segments (135 miles) would be managed to protect their outstandingly remarkable values, free-flowing nature, and tentative classification. This management would protect cultural resources from inadvertent damage, by limiting ground disturbance in these areas.

Areas of Critical Environmental Concern

Alternative C designates 16 ACECs (886,810 acres). Allowing no uses that would cause irreparable damage to the relevant and important values in these areas would reduce surface-disturbing activities within the areas, thereby providing cultural resources protection from inadvertent damage. Disallowed uses would include closing to OHV use; managing as either closed to leasing or open to leasing with major constraints (NSO), depending on the ACEC; designating as VRM Class II; making the areas unavailable for livestock grazing; and acquiring inholdings.

Alternative D

Impacts from Vegetation and Fire and Fuels Management

Impacts would be the same as those described under Alternative C.

Impacts from Cultural Resources

Impacts would be the same as those described under Alternative C. Advertising archaeological resources could increase visitation, which may result in trampling, creation of trails and removal of vegetation which would increase erosion and damage to sites. There might be increased vandalism. May need to monitor and address result of increased visitation. This is why some offices have not designated archaeological ACECs. Increased visitation may also denigrate the values Native Americans have for the area.

Impacts from Visual Resources

The types of impacts experienced as a result of VRM decisions would be similar to those described under Alternative N. However, these impacts would occur over a much smaller area because of differences in VRM class designations between the two alternatives. Under Alternative D, 1,129,600 acres (53% of the lands managed by the RFO) would be designated as VRM Class I; 66,700 acres (3%) would be managed as VRM Class II; 355,100 (17%) would be managed as VRM Class III; and 576,600 (27%) would be managed as VRM Class IV. Just over half of the RFO would be designated as VRM Class I or II, meaning that the existing character of the landscape must be preserved or retained. Thus, surface-disturbing activities would generally not be allowed in these areas, resulting in reduced potential for damage to cultural resources, compared to Alternative N, A, or C or the Proposed RMP.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under Alternative D, 682,600 acres would be managed to maintain wilderness characteristics. Management actions would include minimizing or avoiding surface-disturbing activities by designating the areas as closed to oil and gas leasing, closing the areas to OHV use, and designating the areas as VRM Class I. The emphasis on naturalness and a lack of surface-disturbing activities within these areas would minimize impacts to cultural resources because there would be no vehicular activity or other forms of disturbance that could affect cultural sites. However, protection of wilderness characteristics lands could also preclude archaeological site excavations or research activities during which surface-disturbing activities would occur. However, resource inventories would not be precluded, and information gathered from these inventories would increase knowledge of cultural resources, especially in the Wildcat Knolls and Mount Ellen—Blue Hills non-WSA areas. Management actions under Alternative D would also close off vehicle access to known cultural sites that are visited as a recreational activity within these non-WSA areas. Of all the alternatives, Alternative D would provide the most protection to cultural resources.

Impacts from Forestry and Woodland Products

Impacts would be similar to those described under Alternative C. However, no commercial or non-commercial harvest of forest and woodland products would be allowed within the 682,600 acres of non-

WSA lands with wilderness characteristics. Thus, the potential for localized surface disturbance to cultural resources would be greatly reduced under Alternative D, compared to all the other alternatives.

Traditional cultural practices would not be affected because Native American collection of woodland products in riparian areas (outside of WSAs) for traditional purposes would be allowed.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

The types of impacts experienced as a result of recreation management would be similar to those described under Alternative C. However, seven SRMAs (1,358,100 acres) would be established to manage recreational use and to mitigate impacts caused by this use, such as uncontrolled camping, parking, and other activities. No SRMAs would be established for OHV use, which would decrease the potential for damage to cultural resources from this type of use. As described under Alternative C, the development of facilities could have localized, site-specific impacts, although Section 106 procedures would be adhered to prior to construction of any facilities.

Impacts from Travel Management

The types of impacts experienced as a result of travel management would be similar to those described under Alternative C. However, Alternative D would limit motorized use to designated routes on 972,800 acres (46% of the RFO); 1,155,200 acres (54%) would be closed to motorized vehicle use. The lack of open areas would eliminate impacts that vehicle use could cause to cultural resources in those areas. Limiting motorized use to designated routes—the public would have access to 3,043 miles of unpaved routes—would generally limit soils impacts to areas in the immediate vicinity of the designated route; 1,242 miles of routes would be closed, allowing protection of cultural resources in those areas.

Impacts from Lands and Realty

Impacts from land tenure adjustments would be the same as those described under Alternative N.

The types of impacts experienced as a result of withdrawals would be similar to those described under Alternative N, except that more acres (903,900 acres) would be recommended for withdrawal under Alternative D. Thus, unavoidable impacts that minerals activities would cause to cultural resources would be significantly less under Alternative D than under Alternative N.

The types of impacts experienced as a result of land use authorizations would be similar to those described under Alternative N, except that more ROW avoidance areas are proposed under Alternative D (1,203,800 acres closed to leasing or open to leasing subject to major constraints [NSO], 12 suitable WSR segments, and 16 ACECs). Because Section 106 of NHPA would need to be adhered to for all actions undertaken by BLM, impacts to cultural resources would be negligible.

Impacts from Minerals and Energy

The types of impacts experienced as a result of minerals and energy management would be similar to those described under Alternative N. However, these potential impacts would occur over a substantially smaller area under Alternative D; —967,500 acres, or 45% of the RFO— would be open to some category of oil and gas leasing that could result in surface disturbance caused by seismic operations that support oil and gas leases. Potential categories include the following: open to oil and gas leasing subject to the standard terms and conditions, open to leasing subject to moderate constraints (TL, CSU), and open to oil and gas leasing subject to major constraints (NSO). This management would likely result in the

identification of cultural sites in these areas. Upon identification, seismic operations should be able to avoid all the identified sites.

Alternative D allows sale of mineral materials (salable minerals) on 967,500 acres (45% of the RFO). Existing areas of salable mineral disposals have already been substantially impacted—any cultural resources present probably have been significantly altered or destroyed, resulting in loss of information. However, new sites would be subject to Section 106 procedures, which would either protect the site through avoidance or result in mitigation (scientific data recovery methods such as recordation, surface collection, subsurface testing, and excavation).

Under Alternative D, 1,160,500 acres would be closed to leasing and closed to disposal of salable minerals; 903,900 acres would be recommended for withdrawal from mineral entry. Closing or withdrawing areas from mineral operations would prevent impacts that these types of activities could cause to cultural resources. Alternative D proposes more acres of mineral withdrawals and more areas closed to leasing or to disposal of salable minerals than do any of the other alternatives.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Impacts would be the same as described under Alternative C.

Areas of Critical Environmental Concern

Impacts would be the same as described under Alternative C.

4.3.6 Paleontological Resources

This section presents potential impacts of the alternatives on paleontological resources. A comprehensive paleontological resource inventory of the RFO has not been conducted, and the occurrences of most paleontological resources are not known, although a review of paleontological research on formations contained within the RFO has identified the types of fossil resources known to be present. See Chapter 3 for a discussion of the paleontological resources in the RFO.

Impacts on paleontological resources occur from natural weathering and erosion, surface-disturbing activities, excavation, and theft or vandalism. In general, fossil resources are physically destroyed through such agents or activities; in the case of illegal theft and vandalism, important contextual data is also irretrievably lost. Unlike cultural resources, which exist largely at or near the land surface, paleontological resources are found both at the surface and throughout the subsurface environment. As a result, actions (e.g., coal mining or road construction), that may destroy a fossil presently at the surface may at the same time expose new resources that were deeply buried in rock strata. In this same manner, erosion is continually bringing new fossils to the surface even as it destroys what is presently exposed. For management purposes, impacts must be set against the context of the rarity of individual fossil specimens. As erosion brings a particular fossil specimen to the surface, if it is a relatively common and well understood fossil species or a non-diagnostic portion of a potentially rare form, impacts on that resource, up to and including its complete physical destruction, are not significant. By definition, all vertebrate fossils are considered rare by BLM, and impacts to these types of fossils are of greatest concern.

BLM paleontological resource management policy is to identify, evaluate, and (when appropriate) protect scientifically significant paleontological resources, ensuring that proposed land uses that BLM initiates or authorizes do not inadvertently damage or destroy these resources (BLM Manual 8270, *Paleontological Resource Management*). BLM policy also requires the facilitation of appropriate scientific, educational, and recreational uses of paleontological resources, such as research and interpretation. Surface-disturbing actions are required to mitigate damage to paleontological resources. Mitigation measures include project relocation or redesign (avoidance) or scientific data-recovery methods. Avoidance is BLM's preferred mitigation measure for surface-disturbing activities. Standard assessment/inventory and avoidance procedures conducted in conjunction with surface-disturbing actions would protect most paleontological resources from significant impacts. If mitigation measures are implemented, these newly exposed fossils become available for salvage, data recovery, scientific analysis, and preservation into perpetuity at a public museum (beneficial impact). The beneficial effects of mitigation include advances in scientific knowledge by both permitted field researchers and paleontologists who study fossils in museum collections, contributions to public education and interpretation, and community involvement and partnerships. In general, impacts on paleontological resources from ground disturbance are long-term in nature. Although natural erosion, exposure, and deterioration of paleontological localities may be slowed or halted, damage to fossils and localities cannot typically be reversed.

Methods and Assumptions

This analysis was based on the following assumptions:

- Paleontological resources will continue to be discovered throughout the RFO.
- Recovery and curation in paleontological resources by permitted specialists would result in resource protection and preservation of paleontological values as well as in educational opportunities.
- Paleontological resources identified during assessments and inventories would be protected through data collection and mitigation.

- The number of localities that could be impacted by various actions would directly correlate to the degree, nature, and quantity of surface-disturbing activities within the RFO.
- Surface-disturbing activities could expose, dislodge, or damage paleontological resources and features that were not visible prior to surface disturbance.

The analysis of potential impacts to paleontological resources is based on the expertise of BLM resource specialists at the RFO and the Utah State Office. The impact analysis is also based on review of existing literature, geologic maps, field trips, site visits, and information provided by non-planning team experts in BLM, United States Geological Survey (USGS), and other agencies.

Paleontological resources are associated with specific geologic formations. The paleontological resources section in Chapter 3 includes a summary table of the fossil assemblages that are associated with each geologic group, formation, and member in the RFO. No vertebrate fossil remains have been documented in the RFO. However, vertebrate fossil remains are found adjacent to the RFO (such as in Grand Staircase-Escalante National Monument), within many of the same geologic formations that are present in the RFO.

All surface-disturbing activities include mitigation to reduce impacts to paleontological resources. Analysis of impacts includes all mitigation measures in place. Effects are quantified when possible. In absence of quantitative data, best professional judgment was used.

Environmental Consequences

Impacts to paleontological resources would result from actions proposed under the following resource management programs:

- Vegetation and Fire and Fuels Management
- Paleontological Resources
- Visual Resources
- Non-WSA Lands with Wilderness Characteristics
- Recreation
- Travel Management
- Lands and Realty
- Minerals and Energy
- Special Designations

Other programs were determined to have little or no impact on paleontological resources.

Alternative N: No Action

Impacts from Vegetation and Fire and Fuels Management

Alternative N allows for limited treatment of vegetation (including mechanical, wildland or prescribed fire, and chemical methods). Wildland fire use and prescribed fire could cause direct and indirect impacts to paleontological resources. Fire could cause the direct destruction of organic fossil remains; the removal of vegetative cover by fire would accelerate erosion in the short-term, creating indirect impacts. However, these impacts would be negligible compared with similar impacts that occur by natural processes.

Fire suppression that involves the use of heavy equipment, road construction, and building of fire lines could damage or destroy surface fossils. In these areas, paleontological mitigation would reduce potential adverse impacts to below the level of significance. Potential long-term adverse impacts would result from the construction of new fire roads, which would increase access to BLM lands that were previously less

accessible to the public, thus increasing the potential for unauthorized fossil collecting and vandalism. The recovery and preservation of fossils as the result of paleontological mitigation would be a beneficial impact because these actions would permanently preserve paleontological resources that may otherwise never have been discovered, and make the resources available for scientific research, education, and display.

Impacts from Paleontological Resources

Monitoring scientifically significant paleontological localities would document the rate of deterioration and provide baseline data for possible site protection, restoration, or data retrieval. Not excavating and curating scientifically significant sites could result in the natural deterioration of the sites and the loss of the associated paleontological information. Not monitoring scientifically significant sites could result in the natural deterioration or incidental damage of the sites and the loss of the associated paleontological information.

Paleontological inventory data for the RFO is crucial for sound resource protection decisions. Annual compilations of all new paleontological localities should be updated into a single, comprehensive GIS database that is accessible to local resource specialists. This database would ultimately lead to better resource protection because it would provide decision-makers with emerging patterns for the spatial and temporal distribution of paleontological resources. Not requiring assessments or inventories in areas with a medium potential for paleontological resources could result in damage to fossils after surface disturbance commences, resulting in the loss of scientifically significant paleontological resources.

Providing interpretive opportunities could provide more paleontological resource sites for public use and education because inventories would be required to recover scientifically important data prior to allowing public use of the sites. Increased paleontological interpretation could also increase public appreciation for the decision area's paleontological values. Increased public appreciation could lead to increased user stewardship. Impacts associated with stewardship attitudes include the following: increased protection of paleontological sites, decreased inadvertent damage to or disturbance of paleontological sites, decreased vandalism and looting, and preserved integrity of paleontological resources.

Allowing surface collection of common invertebrate and botanical paleontological resources throughout the RFO could result in the incidental collection of scientifically significant resources.

Impacts from Visual Resources

In general, VRM class management actions would limit or allow surface-disturbing activities in certain areas, thereby affecting paleontological resources. VRM Classes I and II would be aimed at greater retention of existing landscape character than would Classes III or IV. Under Alternative N, none of the lands managed by the RFO would be classified as VRM Class I; 529,500 acres (25%) would be managed as VRM Class II; 569,000 acres (27%) would be managed as VRM Class III; and 1,029,500 acres (48%) would be managed as VRM Class IV. Restrictions on visually obtrusive developments in VRM Class II areas would limit development; although not a restriction on surface disturbance, management to preserve and maintain the landscape could reduce disturbance that could impact paleontological resources. This long-term impact would generally protect paleontological resources in place. Areas managed as VRM Class III or IV (75% of the RFO under Alternative N) would be subject to actions that allow for greater landscape modification and therefore greater surface disturbance. These areas could be subject to such actions as complete vegetation removal, which drastically increases the potential for wind and water erosion and the potential for adverse impacts to paleontological resources.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under this alternative, resulting in no additional protection for paleontological resources.

Impacts from Recreation

Recreational activities could have direct and indirect impacts on paleontological resources if these activities occur in areas containing occurrences of scientifically significant surface fossils. Motorized use has the greatest potential to adversely affect paleontological resources because of surface disturbance and associated accelerated erosion. Active management of recreational use within the RFO should minimize these impacts by limiting use in sensitive areas that are more likely to contain scientifically significant surface fossils.

Unlike permitted activities (e.g., mineral development, ROW development) that are subject to site-specific evaluations and monitoring, dispersed recreation activities are not under the same degree of scrutiny prior to use. Because of their widespread occurrence and generally unsupervised nature, casual recreational use would likely result in unmitigated impacts on surface-exposed paleontological resources. Most of this impact would result from unauthorized collecting and vandalism. However, unmitigated impacts could also result from any surface-disturbing aspect of recreation. Dispersed recreation occurs throughout the RFO.

Under this alternative, the entire RFO (with the exception of Yuba Reservoir, which is managed by the Fillmore FO) is identified and managed as an ERMA. Management of recreation in ERMAs is restricted to custodial actions only, with no identified special prescriptions that would limit use in areas that contain occurrences of scientifically significant surface fossils. Thus, recreational use within the RFO could result in direct impacts to paleontological resources from unauthorized fossil collecting and vandalism, as well as indirect impacts from increased erosion caused by loss of vegetation cover and by soil compaction.

Impacts from Travel Management

Generally, the more area that is open to OHV use, the greater the potential for adverse impacts to paleontological resources because of surface disturbance and trampling of vegetation, which leads to accelerated erosion. Under Alternative N, 1,636,400 acres (77%) of the RFO would be open to motorized vehicles, allowing potential impacts to paleontological resources over a large portion of the RFO. This allowance would decrease vegetation density, increase erosion, and could generally break, spread, and otherwise disturb paleontological resources at the surface. The significance of this impact would depend on the scientific significance of the fossils that could be affected. Mitigation of paleontological resource damage would be accomplished through data-recovery efforts implemented on a case-by-case basis when the damage is discovered.

Motor vehicles would be limited to existing, designated, and maintained routes on 277,600 acres (13% of the RFO). Limiting OHV use to 4,315 miles of designated routes could result in similar impacts. In these areas, impacts from vehicle use off the route would be eliminated, but sites adjacent to routes could be damaged. Designating existing routes that already receive OHV use as open for continued use would not, by the act of designation, result in increased impacts. Because the designated routes currently exist and receive use, additional impacts on or adjacent to them would be minimal. In areas in which OHV use is limited to designated routes, there would be no impacts from OHV use in areas away from the designated routes.

Alternative N would have the greatest potential impacts to paleontological resources because of the large amount of lands open to cross-country motorized use, the most miles of roads (4,315 miles) open to motorized travel, and the fewest miles of roads (65 miles) closed to motorized travel. Road closures,

which would reduce erosion, trampling, vandalism, and other surface-disturbing impacts that damage paleontological resources, could also affect research by limiting access.

Impacts from Lands and Realty

Lands and realty actions could result in the acquisition of surface and subsurface estate, which would bring the estate under federal protection and benefit paleontological resources. Identifying 280 acres as available for sale would make these lands susceptible to long-term indirect and cumulative adverse impacts on paleontological resources by removing scientifically significant fossils from the public domain, thus rendering them permanently unavailable for scientific research and education.

Withdrawing lands from all forms of entry, location, selection, sale, or leasing under the public land laws would provide protection to paleontological resources from the impacts of mining exploration and development that could damage these resources. Alternative N proposes a total of 169,480 acres of withdrawals. Mining disturbance and associated impacts to paleontological resources would therefore not occur in these areas.

Any new land use authorizations (e.g., ROWs, permits, leases, easements) could impact paleontological resources through surface disturbance (which could directly damage the resource) or through soil compaction and vegetation removal (which could lead to soil erosion and indirect impacts). Under this alternative, all ACECs (14,780 acres), eligible WSR corridors (12 segments—135 miles), areas closed to leasing (459,700 acres), and areas open to leasing subject to major constraints (NSO) (22,600 acres) would be managed as ROW avoidance areas. Exceptions would be granted only if the proposed authorization would not create substantial surface disturbance or would create only temporary impacts. Thus, impacts to paleontological resources in these avoidance areas would be negligible to minor and would be localized.

Impacts from Minerals and Energy

Development of oil and gas resources could affect paleontological resources because of the surface disturbances associated with such development. Oil and gas would be open to leasing subject to standard terms and conditions and open to leasing subject to moderate constraints (TL, CSU) on 1,645,700 acres (77% of the RFO). Based on the RFD, oil and gas development could impact as much as 8,180 acres over the life of this plan (Appendix 12). In these areas, paleontological resources could be identified prior to oil and gas development if an assessment or inventory was performed, but neither is required under Alternative N. Thus, the potential for significant impacts exists because of the lack of required inventories prior to surface disturbance. Vertebrate or other scientifically significant fossils could be inadvertently damaged from disturbance if they were not identified and avoided.

Surface disturbance associated with the development of salable materials and locatable minerals could impact paleontological resources in a similar manner to the impacts noted for oil and gas development. Under this alternative, 1,668,300 acres would be open to disposal of salable minerals; 1,958,520 acres would be potentially available for mineral location. Paleontological localities could be identified prior to surface disturbance if an assessment or inventory were completed, but neither is required under Alternative N. Thus, the potential would exist for significant impacts to vertebrate or other scientifically significant fossils, which could be damaged inadvertently if they were not identified and avoided.

Paleontological resources in areas that are open to leasing subject to major constraints (NSO) (22,600 acres), closed to leasing (459,700 acres), or closed to disposal of salable minerals (459,700 acres) would be protected from oil and gas development. In addition, paleontological resources in areas withdrawn from minerals entry (169,480 acres) would be protected from potential impacts associated with the extraction of those minerals (see Impacts from Lands and Realty for a discussion of withdrawals).

Impacts from Special Designations

Wilderness Study Areas

WSAs are managed under non-impairment criteria until Congress either designates an area as wilderness or releases it from further consideration. This management effectively provides protection to the paleontological resources in those areas by limiting motorized access and most of the activities that could adversely affect the sites. However, this management also affects research proposals and activities at sites within WSAs; such restrictions on surface disturbance could make paleontological resource studies more difficult. Any activities conducted within a WSA must meet the IMP non-impairment criteria. Anything that would not comply with these criteria (e.g., anything that would impair the suitability of such areas for preservation as wilderness) would not be authorized.

Wild and Scenic Rivers

Protecting the outstandingly remarkable values of the eligible WSRs would help protect cultural resources by preventing ground-disturbing activities in the river corridors. Under Alternative N, all eligible segments (12 segments—135 miles) would be managed to protect their outstandingly remarkable values, free-flowing nature, and tentative classification. This management would benefit paleontological resources by limiting ground disturbance in these areas.

Areas of Critical Environmental Concern

Although ACEC designation alone does not necessarily provide protection, management actions included in ACECs are often more restrictive, thus indirectly providing protection for paleontological resources. Protections that are associated with ACEC designation and that would affect paleontological resources include managing oil and gas leasing as closed to leasing or open to leasing subject to major constraints (NSO); identifying more restrictive VRM designations; and limiting travel. Alternative N continues the designation of four ACECs (14,780 acres). Allowing no uses that would cause irreparable damage to the relevant and important values in these areas would reduce surface disturbing activities within those areas, protecting paleontological resources. Such disallowances include closing the areas to OHV use; managing the areas as either closed to leasing or open to leasing subject to major constraints (NSO), depending on the ACEC; and acquiring inholdings.

Alternative A

Impacts from Vegetation and Fire and Fuels Management

The types of impacts experienced as a result of vegetation and fire and fuels management would be similar to those described under Alternative N, although under Alternative A maximum acreage limits would be set (averaging 73,600 annually for all treatments). Although no maximum treatment acreage limits would be set under Alternative N, it is likely that more acres would actually be treated under that alternative because it allows for the full range of fire and fuels management actions to achieve ecosystem sustainability. Alternative N allows for treatment of vegetation (including mechanical, wildland fire use or prescribed fire, and chemical methods). Alternative A incorporates more mechanical treatment than does either Alternative N or the Proposed RMP.

Impacts from Paleontological Resources

Requiring paleontological assessments prior to permitting surface-disturbing activities in areas that have a high potential for paleontological resources would identify new paleontological localities. Proposed land uses would include actions such as mineral exploration and development (including oil and gas development), development/construction within ROWs, recreation site development, some vegetation treatment projects, some forest/woodland product harvest, or construction of some range improvements. Based on the findings of the assessment, mitigation would be implemented at all phases of development. Although assessments would minimize the potential for unmitigated impacts to known paleontological

resources, assessments would not require an on-the-ground inventory prior to all disturbances. This could result in the inadvertent damage of paleontological resources that were not identified prior to surface disturbance. Inadvertent damage to vertebrate fossils or other scientifically significant paleontological resources would generally be a significant impact, although mitigation could reduce the magnitude of damage, by providing data recovery.

Targeting fossil sites with high scientific value for excavation and curation would ensure that fossil sites with high scientific value are protected either through excavation and data recovery or through increased monitoring. In addition, monitoring high-significance (scientific or interpretive) sites with fossil resources that are not feasible or desirable to excavate or collect would ensure that fossil sites that are important to science and the public would be protected from inadvertent damage or natural deterioration.

Allowing collection of common invertebrate and botanical paleontological resources (except for scientifically significant resources) throughout the RFO could result in the incidental collection of significant resources. However, identifying (and closing to casual collection) areas with rare and significant fossils could reduce impacts caused by incidental collection, compared to Alternative N.

Impacts from Visual Resources

The types of impacts experienced as a result of VRM would be similar to those described under Alternative N. Under Alternative A, 446,900 acres (21% of the lands managed by the RFO) would be designated as VRM Class I; 0 acres would be designated as VRM Class II; 392,800 acres (18%) would be designated as VRM Class III; and 1,288,300 acres (61%) would be designated as VRM Class IV. Designating the majority of the RFO as VRM Class III or IV could result in large areas of moderate to major modifications in the existing character of the landscape, with accompanying surface disturbance and potential inadvertent damage to paleontological resources.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under this alternative, resulting in no additional protection for paleontological resources.

Impacts from Recreation

The establishment of and management associated with SRMAs would provide for management at popular recreation use areas. Management of these areas would decrease the potential for inadvertent damage of paleontological resources, compared to Alternative N.

Under Alternative A, five SRMAs (514,500 acres) would be established to manage recreational use and to mitigate impacts caused by this use, such as uncontrolled camping, parking, and other activities. This management would decrease the potential for inadvertent damage of paleontological resources, compared to Alternative N. Managing the Factory Butte, Big Rock, and Sahara Sands SRMAs for motorized recreational opportunity and allowing moderate to extensive landscape modification would have potentially major impacts and would result in continued impacts to paleontological resources. However, these areas currently receive heavy motorized use, so sites likely are damaged already. Limiting OHV use in the Otter Creek Reservoir and Dirty Devil/Robbers Roost SRMAs to designated routes would limit the extent of potential impacts to paleontological resources.

Alternative A allows vehicles to pull off of designated routes (outside WSAs) 100 feet to either side of the centerline (for parking or staging) and 300 feet to either side of the centerline (for camping). This allowance could result in vehicles generally disturbing paleontological resources at the surface.

Impacts from Travel Management

The types of impacts experienced as a result of travel management decisions under Alternative A would be similar to those described under Alternative N. Limiting OHV use to designated routes on 1,679,000 acres (79% of the RFO) would provide increased protection to paleontological resources, compared to Alternative N. The change from managing most of the RFO as open to cross-country OHV use (under Alternative N) to limiting OHV use to designated routes would decrease impacts. Paleontological resources away from designated routes would be protected from OHV impacts. Rather than the potential for increased disturbance and incidental damage associated with pioneered routes in areas open to cross-country use, impacts on paleontological resources from OHV use on designated routes, as discussed under Alternative N, would be limited to 4,312 miles of designated routes (which is virtually identical to the number designated in Alternative N). In addition, reducing the number of routes open for motorized use would further reduce the accessibility of remote paleontological localities. While such isolation provides indirect protections from inadvertent damage, it also increases the potential for a locality to be damaged through natural deterioration, prior to being identified and recovered. There would be no impacts from OHV use on 68 miles of closed routes.

Impacts from Lands and Realty

Impacts from land tenure adjustments would be the same as those described under Alternative N.

The types of impacts experienced as a result of withdrawals would be similar to those described under Alternative N, except that fewer acres (154,700 acres) would be recommended for withdrawal under Alternative A. Thus, unavoidable impacts to paleontological resources from minerals activities would be greater under Alternative A than under Alternative N, although sites that are unavoidable would be mitigated.

The types of impacts experienced as a result of land use authorizations would be similar to those described under Alternative N, except that Alternative A would designate fewer ROW avoidance areas.

Impacts from Minerals and Energy

Under Alternative A, similar amounts of BLM lands would be closed to fluid mineral leasing (446,900 acres), withdrawn from mineral location (154,700 acres), and closed to mineral material disposal (446,900 acres), as compared to Alternative N, thus resulting in similar impacts.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as described under Alternative N.

Wild and Scenic Rivers

Under Alternative A, no eligible river segments would be recommended as suitable, and no special management to protect the outstandingly remarkable values of these rivers would be provided. Thus, the potential for inadvertent damage to paleontological resources from surface-disturbing activities would be greatest under this alternative. However, most of the eligible river segments (98 of the 135 total miles) are also within WSAs, which would provide protection for these resources.

Areas of Critical Environmental Concern

Under Alternative A, no areas would be designated as ACECs. Providing no special management prescriptions would allow surface-disturbing activities within those areas, which could result in inadvertent damage to paleontological resources.

Proposed RMP

Impacts from Vegetation and Fire and Fuels Management

Impacts would the same as those described under Alternative A.

Impacts from Paleontological Resources

Requiring on-the-ground paleontological inventories prior to permitting surface-disturbing activities in areas that have a high potential for paleontological resources would result in the identification, evaluation, and protection (when appropriate) of scientifically significant fossil resources. By focusing on areas that have a high potential, the formation and facies most likely to contain scientifically significant fossils would be scrutinized. If fossil resources are identified, mitigation measures could be applied to protect the resource. Mitigation measures include project relocation or redesign (avoidance) or various scientific data recovery methods, such as recordation, surface collection, subsurface testing, or excavation. These mitigation actions would prevent significant impacts to paleontological resources while increasing the knowledge and understanding of the area's paleontological resources and of the history of life on Earth. In addition, projects such as development and construction within ROWs, recreation site development, or construction of range improvements would be studied prior to implementation.

Requiring assessments in areas that have a medium potential for paleontological resources would allow for mitigation needs to be identified and implemented in areas that are less likely to contain significant fossils. There would be a potential for some localities in areas with a medium potential to be damaged after surface disturbance begins, if a field inventory were not performed. Based on the findings of the assessment, mitigation would be implemented at all phases of development.

As the number of paleontological inventories and assessments increases compared to Alternative A, knowledge of the area's paleontological resources would increase. More paleontological localities would be identified and there would be an associated reduction in the number of localities that could be damaged prior to surface-disturbing activity.

The prioritization for new non-Section 106 inventories in these areas would identify paleontological resources and sites, increasing the database of resources. Compared to Alternative A, the Proposed RMP would increase the knowledge base in this area while providing for improved management of these resources.

Impacts from collection of common invertebrate and botanical paleontological resources would be the same as those described under Alternative A.

Impacts from Visual Resources

The types of impacts experienced as a result of VRM decisions would be similar to those described under Alternative N. Under the Proposed RMP, 446,900 acres (21% of the lands managed by the RFO) would be designated as VRM Class I; 249,800 acres (12%) would be designated as VRM Class II; 393,100 acres (18%) would be designated as VRM Class III; and 1,038,200 acres (49%) would be designated as VRM Class IV. The majority of the RFO would be designated as VRM Class III or IV, which could result in large areas of moderate-to-major modifications in the existing character of the landscape, with accompanying surface disturbance and potential inadvertent damage to paleontological resources. However, less of the RFO would be designated in these VRM classes under the Proposed RMP than under Alternative N or A, resulting in less potential impacts, compared to those alternatives.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under the Proposed RMP, 78,600 acres would be managed to maintain wilderness characteristics. Management actions would include minimizing or avoiding surface-disturbing activities by taking

measures such as designating the lands as closed to leasing or open to leasing subject to major constraints (NSO), limiting motorized uses to designated routes, or designating the lands as VRM Class II. The emphasis on naturalness and a lack of surface-disturbing activities within these areas would minimize impacts to paleontological resources because there would be no vehicular activity or other forms of disturbance that could affect paleontological sites. Protection of non-WSA lands with wilderness characteristics can restrict methods of paleontological site excavations or research activities in areas in which surface-disturbing activities would occur. However, resource inventories would not be precluded, and information gathered from these inventories would increase knowledge of paleontological resources.

Impacts from Recreation

The types of impacts experienced as a result of recreation management would be similar to those described under Alternative A. However, the Proposed RMP would establish five SRMAs (860,390 acres) to manage recreational use and to mitigate impacts caused by this use, such as uncontrolled camping, parking, and other activities. This alternative proposes only 24,400 acres at Factory Butte and 90 acres at Big Rocks as OHV SRMAs, which would decrease the potential for inadvertent damage of paleontological resources, compared to Alternative A.

The Proposed RMP allows vehicles to pull off of designated routes (outside WSAs) 50 feet to either side of centerline (for parking/staging), and 150 feet to either side of centerline (for camping). Although this allowance could result in vehicles disturbing paleontological resources at the surface, the area of potential impact would be less than under either Alternative N or A.

Impacts from Travel Management

The types of impacts experienced as a result of travel management decisions under the Proposed RMP would be similar to those described under Alternative N. However, the Proposed RMP would allow cross-country OHV use on only 9,890 acres (less than 1% of the RFO). Paleontological resources likely would not be damaged because the areas being proposed for cross-country use have already been subject to disturbance, either through natural processes or human use. Continued disturbance of previously disturbed areas would not result in impacts to paleontological localities.

Limiting OHV use to designated routes on 1,908,210 acres (90% of the RFO) would provide increased protection to paleontological resources, compared to Alternative N or A. Paleontological resources away from designated routes would be protected from OHV impacts. As discussed under Alternative A, rather than the potential for increased disturbance and incidental damage associated with pioneered routes in areas open to cross-country use, impacts on paleontological resources from OHV use would be limited to 4,277 miles of designated routes. There would be no impacts from OHV use on the 209,900 acres (10% of the RFO) closed to OHV use, in areas away from the designated routes, and on the 345 miles of closed routes. In addition, reducing temporary roads associated with temporary projects and reclaiming unnecessary facilities and improvements would further reduce access for paleontological resource study, increasing the isolated nature. While such isolation provides indirect protections from inadvertent damage, it also increases the potential for a locality to be damaged through natural deterioration prior to being identified and recovered.

Impacts from Lands and Realty

Impacts from land tenure adjustments would be the same as those described under Alternative N.

The types of impacts experienced as a result of withdrawals would be similar to those described under Alternative N, except that more acres (176,200 acres) would be recommended for withdrawal under the Proposed RMP. Thus, unavoidable impacts to paleontological resources from minerals activities would be less under this alternative than under Alternative N.

The types of impacts experienced as a result of land use authorizations would be similar to those described under Alternative N, except that more ROW avoidance areas would be proposed under the Proposed RMP.

Impacts from Minerals and Energy

Under the Proposed RMP, similar amounts of BLM lands would be closed to fluid mineral leasing (447,300 acres), withdrawn from mineral location (176,200 acres), and closed to mineral material disposal (601,800 acres), compared to Alternative N, thus resulting in similar impacts.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as described under Alternative N.

Wild and Scenic Rivers

Protecting the outstandingly remarkable values of suitable WSRs would help protect paleontological resources by preventing ground-disturbing activities in the river corridors. Under the Proposed RMP, one suitable segment (5 miles) would be managed to protect its outstandingly remarkable values, free-flowing nature, and tentative classification. This management would protect paleontological resources from inadvertent damage by limiting ground disturbance in this area. The Proposed RMP recommends more suitable river segments than does Alternative A but fewer than does Alternative C or D. Of the remaining segments, 98 miles are within WSAs, leaving 32 miles on which ground-disturbing activities could impact paleontological resources. The Proposed RMP would provide less protection from WSR decisions than would Alternative N, C, or D but more protection than would Alternative A.

Areas of Critical Environmental Concern

The Proposed RMP designates two ACECs (2,530 acres). Allowing no uses that would cause irreparable damage to the relevant and important values in these areas would reduce surface-disturbing activities within those areas, thereby providing paleontological resources with protection from inadvertent damage. Uses that would be disallowed would include closing the area to OHV use; managing the area as either open to leasing subject to major constraints (NSO), depending on the ACEC; and acquiring inholdings. The Proposed RMP would designate more ACECs than would Alternative A but fewer ACECs than would Alternative C or D.

Alternative C

Impacts from Vegetation and Fire and Fuels Management

The types of impacts experienced as a result of vegetation and fire and fuels management would be similar to those described under Alternative A and the Proposed RMP, although under Alternative C fewer acres would be treated annually (averaging 26,000 annually for all treatments). However, Alternative C proposes using only those processes (prescribed fire, biological, and hand cutting) that mimic natural processes to manage vegetation. This restriction would reduce the number of acres treated with methods that directly affect soils, thus reducing the potential for direct damage to paleontological localities.

Impacts from Paleontological Resources

Requiring paleontological inventories throughout the RFO prior to permitting surface-disturbing activities would result in the inventory, identification, and collection of paleontological resources throughout the RFO. Proposed land uses that would require inventories would include actions such as mineral exploration and development (including oil and gas development), development or construction of

ROWs, recreation site development, some vegetation treatment projects, timber harvest, and construction of some range improvements. No surface disturbance would occur until an on-the-ground inventory cleared the area to proceed and until any paleontological resources were identified and avoided or recovered. Therefore, Alternative C would result in lower potential for incidental damage to paleontological resources than would Alternative N or A or the Proposed RMP. In addition, increases in the acres inventoried would result in more identified paleontological localities than under the other alternatives. All impacts that surface-disturbing actions could cause to identified paleontological sites would be mitigated. Impact mitigation would minimize the potential for adverse effects to identified paleontological sites.

The prioritization for new non-Section 106 inventories in these areas would identify paleontological resources and sites, increasing the database of resources. Compared to Alternative N or A or the Proposed RMP, Alternative C would increase the knowledge base in this area while providing for improved management of these resources. Requiring such inventories annually would ensure an increase in the knowledge and understanding of the decision area's paleontological resources. This knowledge and understanding would improve management of these resources.

Allowing collection of common invertebrate and botanical paleontological resources in specifically designated areas would reduce the potential for incidental collection of scientifically significant resources, compared to Alternative N or A or the Proposed RMP. In these areas, non-scientifically significant paleontological resources could be removed. Areas with rare or scientifically significant resources would not be open for personal collection, thus protecting these resources.

Impacts from Visual Resources

The types of impacts experienced as a result of VRM decisions would be similar to those described under Alternative N. Under Alternative C, 446,900 acres (21% of the lands managed by the RFO) would be designated as VRM Class I; 230,600 acres (11%) would be designated as VRM Class II; 509,100 acres (24%) would be designated as VRM Class III; and 941,400 acres (44%) would be designated as VRM Class IV. Although the majority of the RFO would be designated as VRM Class III or IV, less of the RFO would be designated in VRM Class IV (which allows major modifications to the existing character of the landscape with accompanying surface disturbance) than would be under Alternative N or A or the Proposed RMP, resulting in less potential for inadvertent damage to paleontological resources.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under Alternative C, resulting in no additional protection for paleontological resources.

Impacts from Recreation

The types of impacts experienced as a result of recreation management would be similar to those described under Alternative A. However, under Alternative C, four SRMAs (930,000 acres) would be established to manage recreational use and to mitigate impacts caused by this use, such as uncontrolled camping, parking, and other activities. No SRMAs would be established for OHV use under Alternative C, thereby decreasing the potential for damage to paleontological resources from this type of use.

Managing the Dirty Devil/Robbers Roost SRMA (375,800 acres) for dispersed recreation in a primitive setting would indirectly reduce the potential for surface disturbance (and associated damage to paleontological resources) caused by recreation. Managing the Henry Mountains SRMA (533,900 acres) for primitive and semi-primitive recreation and managing the Sevier Canyon SRMA (7,500 acres) for scenic values would indirectly maintain or reduce the potential for disturbance and damage to paleontological resources. Managing the Capitol Reef Gateway SRMA (12,800 acres) for a natural

recreation experience and the development of facilities could have localized site-specific impacts, although paleontological inventories would be required prior to construction of any facilities.

Alternative C allows vehicles to pull off of designated routes (outside WSAs) 25 feet to either side of the centerline (for parking/staging); camping would be allowed only in designated campsites, with travel between campsites allowed only on designated routes. Together, these restrictions would minimize disturbance to paleontological resources and would result in less disturbance to these resources than would Alternative N or A or the Proposed RMP.

Impacts from Travel Management

The types of impacts experienced as a result of travel management would be similar to those described under the Proposed RMP. However, Alternative C would designate no areas as open to motorized vehicles; would limit motor vehicles to designated routes on 1,445,000 acres (68%) of the RFO; and would close 683,000 acres (32%) to motorized vehicle use. The lack of open areas would eliminate impacts that vehicle use could cause to paleontological resources in those areas. Limiting motorized use to designated routes—the public would have access to 3,192 miles of unpaved routes—would generally limit paleontological resource impacts to areas in the immediate vicinity of the designated route; 1,188 miles of routes would be closed, resulting in less potential for damage to paleontological resources in those areas.

Impacts from Lands and Realty

Impacts from land tenure adjustments would be the same as those described under Alternative N.

The types of impacts experienced as a result of withdrawals would be similar to those described under Alternative N, except that more acres (331,100 acres) would be recommended for withdrawal under Alternative C. Thus, unavoidable impacts that mineral activities might cause to paleontological resources would be less under Alternative C, compared to Alternative N.

The types of impacts experienced as a result of land use authorizations would be similar to those described under Alternative N, except that more ROW avoidance areas (735,000 acres closed to leasing or open to leasing subject to major constraints (NSO), 12 suitable WSR segments, and 16 ACECs) are proposed under Alternative C. Because paleontological inventories would be required prior to permitting all surface-disturbing activities, impacts to paleontological resources would be negligible.

Impacts from Minerals and Energy

The types of impacts experienced as a result of minerals and energy management would be similar to those described under Alternative N because a similar amount of acres (1,541,700 acres, or 72% of the RFO) would be open to some category of oil and gas leasing. These categories would include the following: open to leasing subject to the standard terms and conditions, open to leasing subject to moderate constraints (TL, CSU), and open to oil and gas leasing subject to major constraints (NSO). This management could result in surface disturbance caused by seismic operations that support oil and gas leases, likely resulting in the identification of paleontological resources in these areas. Upon identification, seismic operations should be able to avoid all the identified sites.

Alternative C allows sale of mineral materials (salable minerals) on 1,541,700 acres (72% of the RFO). Existing areas of salable mineral disposals have already been substantially impacted. Therefore, —any paleontological resources present likely have been significantly altered or destroyed, resulting in loss of information.

Under Alternative C, 586,300 acres would be closed to and closed to disposal of salable minerals; 331,100 acres would be recommended for withdrawal from mineral entry. Closing or withdrawing areas from mineral operations would prevent impacts that these types of activities could cause to paleontological resources. Alternative C proposes more acres of mineral withdrawals and more areas closed to leasing or disposal of salable minerals, compared to Alternative N or A or the Proposed RMP. Alternative C would preclude mineral and energy development in those areas and thus provide more protection to these resources.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Protecting the outstandingly remarkable values of suitable WSRs would help protect soil by preventing ground-disturbing activities in the river corridors. All 12 suitable segments (135 miles) would be managed to protect their outstandingly remarkable values, free-flowing nature, and tentative classification under this alternative. Alternative C would also protect paleontological resources from inadvertent damage, by limiting ground disturbance in these areas.

Areas of Critical Environmental Concern

Alternative C designates 16 ACECs (886,810 acres). Allowing no uses that would cause irreparable damage to the relevant and important values in these areas would reduce surface-disturbing activities within the areas, thereby providing protection from inadvertent damage to paleontological resources. Management actions that would limit surface-disturbing activities include: closing the areas to OHV use; managing the areas as either closed to leasing or open to leasing subject to major constraints (NSO), depending on the ACEC; and acquiring inholdings. Alternative C (along with Alternative D) would designate the most ACECs.

Alternative D

Impacts from Vegetation and Fire and Fuels Management

Impacts would be the same as those described under Alternative C

Impacts from Paleontological Resources

Impacts would be the same as those described under Alternative C.

Impacts from Visual Resources

The types of impacts experienced as a result of VRM decisions would be similar to those described under Alternative N. However, these impacts would occur over a much smaller area because of differences in VRM class designations between the two alternatives. Under Alternative D, 1,129,600 acres (53% of the lands managed by the RFO) would be designated as VRM Class I; 66,700 acres (3%) would be designated as VRM Class II; 355,100 acres (17%) would be designated as VRM Class III; and 576,600 acres (27%) would be designated as VRM Class IV. Just more than half of the RFO would be designated as VRM Class I or II, meaning that the existing character of the landscape must be preserved or retained. Thus, surface-disturbing activities (and potential inadvertent damage to paleontological resources) would generally not be allowed in these areas, resulting in reduced potential for damage to these resources, compared to Alternative N, A, or C or the Proposed RMP.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under Alternative D, 682,600 acres would be managed to maintain wilderness characteristics. Management actions would include minimizing or avoiding surface-disturbing activities by closing the lands to leasing, closing the lands to OHV use, or designating the lands as VRM Class I. The emphasis on naturalness and a lack of surface-disturbing activities within these areas would minimize impacts to paleontological resources because there would be no vehicular activity or other forms of disturbance that could affect paleontological sites. Protection of wilderness characteristics lands could also preclude paleontological site excavations or research activities where surface disturbing activities would occur. However, resource inventories would not be precluded, and information gathered from these inventories would increase knowledge of paleontological resources. Alternative D would also close OHV access to known paleontological sites that are visited as a recreational activity within these non-WSA areas. Of all the alternatives, Alternative D would provide the most protection for paleontological resources.

Impacts from Recreation

The types of impacts experienced as a result of recreation management would be similar to those described for Alternative C, except that seven SRMAs (1,358,100 acres) would be established to manage recreational use and to mitigate impacts caused by this use, such as uncontrolled camping, parking, and other activities. No SRMAs would be established for OHV use, thereby decreasing the potential for damage that this type of use could cause to paleontological resources. As described under Alternative C, the development of facilities could have localized site-specific impacts, although paleontological inventories would be conducted prior to construction of any facilities, thereby allowing for avoidance or mitigation of sites.

Impacts from Travel Management

The types of impacts experienced as a result of travel management would be similar to those described under Alternative C. However, Alternative D would limit motorized use to designated routes on 972,800 acres (46% of the RFO) and would close 1,155,200 acres (54%) to motorized vehicle use. The lack of open areas would eliminate impacts caused by vehicle use to paleontological resources in those areas. Limiting motorized use to designated routes—the public would have access to 3,043 miles of unpaved routes—would generally limit soils impacts to areas in the immediate vicinity of the designated route; 1,242 miles of routes would be closed, allowing protection of paleontological resources in those areas.

Impacts from Lands and Realty

Impacts from land tenure adjustments would be the same as those described under Alternative N.

The types of impacts experienced as a result of withdrawals would be similar to those described under Alternative N, except that more acres (903,900 acres) would be recommended for withdrawal under Alternative D. Thus, unavoidable impacts that minerals activities could cause to paleontological resources would be significantly less under Alternative D, compared to Alternative N.

The types of impacts experienced as a result of land use authorizations would be similar to those described under Alternative N, except that more ROW avoidance/exclusion areas (1,203,800 acres closed to leasing or open to leasing subject to major constraints [NSO], 12 suitable WSR segments, and 16 ACECs) would be proposed under Alternative D. These avoidance/exclusion areas would encompass 57% of the RFO, thereby providing more protection to paleontological resources (through reduction in inadvertent impacts) than under any of the other alternatives.

Impacts from Minerals and Energy

The types of impacts experienced as a result of minerals and energy management would be similar to those described under Alternative N. However, these potential impacts would occur over a substantially

smaller area under Alternative D; 967,500 acres (45% of the RFO) would be open to some category of oil and gas leasing. These categories include the following: open to leasing subject to the standard terms and conditions, open to leasing subject to moderate constraints (TL, CSU), and open to oil and gas leasing subject to major constraints (NSO).

Alternative D allows sale of mineral materials (salable minerals) on 967,500 acres (45% of the RFO). Because existing areas of salable mineral disposals have already been substantially impacted, any cultural resources present likely have been significantly altered or destroyed, resulting in loss of information. However, new sites would be subject to paleontological inventories; identified sites would either protect the site through avoidance or result in mitigation (scientific data recovery).

Under Alternative D, 1,160,500 acres would be closed to leasing and closed to disposal of salable minerals; 903,900 acres would be recommended for withdrawal from mineral entry. Closing or withdrawing areas from mineral operations would prevent these types of activity from causing impacts to paleontological resources. Alternative D proposes more acres of mineral withdrawals and more areas closed to leasing or to disposal of salable minerals than any of the other alternatives.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Impacts would be the same as those described under Alternative C.

Areas of Critical Environmental Concern

Impacts would be the same as those described under Alternative N.

4.3.7 Visual Resources

The BLM's VRM class objectives were used to analyze impacts on visual resources. These objectives provide a baseline for determining how much a proposed management action would affect visual resources or scenic quality, as well as for determining the level of disturbance that an area can support while still meeting visual resource objectives.

The following BLM VRM class objectives and descriptions are summarized from *BLM Manual Handbook H-8431-1* (1986).

- **VRM Class I.** The objective of Class I is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activities. The level of change to the characteristic landscape should be very low and should not attract attention.
- **VRM Class II.** The objective of Class II is to retain the existing character of the landscape. The level of change to the landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes to the landscape must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
- **VRM Class III.** The objective of Class III is to partially retain the existing character of the landscape. The level of change to the landscape should be moderate. Management activities may attract the attention of the casual observer, but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
- **VRM Class IV.** The objective of Class IV is to provide for management activities that require major modifications to the existing character of the landscape. The level of change to the landscape can be high. The management activities may dominate the view and may be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repetition of the basic visual elements of form, line, color, and texture.

Visual resource inventories were completed before each of the planning efforts for the existing LUPs. These inventories were used to generate the existing VRM objectives for the lands managed by the RFO (Map 2-1). Landscape and the visual resource conditions may have changed since these objectives were set. Currently, WSAs are managed under a number of VRM classes. In accordance with BLM IM-2000-096, all WSAs would be managed as VRM Class I following completion of this Proposed RMP.

The criteria for analysis were the number of acres proposed for designation under the VRM classes, and the level of impacts and surface disturbances permitted under each class. Analyses of the impacts on visual resources are discussed in terms of the number of acres in each VRM category because management actions under the Proposed RMP would be required to comply with (e.g., not exceed) the approved VRM class objectives.

Methods and Assumptions

The following assumptions are made regarding future management of visual resources:

- Activities proposed that would not initially meet VRM objectives for the area would be mitigated to the extent needed to meet the objectives. Proposed activities that could not be mitigated would not be authorized.

- The greater the size or severity of surface disturbance, the greater the impact there would be to scenic quality.
- All actions proposed during the Proposed RMP process must consider the importance of the visual values and the effects that the project may have on these values.

VRM class designations by alternative are shown in Table 4-14.

Table 4-14. VRM Classes, Acres, and Percentage of RFO Lands

VRM Class	Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Class I	0 acres * (0%)	446,900 acres (21%)	446,900 acres (21%)	446,900 acres (21%)	1,129,600 acres (53%)
Class II	529,500 acres (25%)	0 acres (0%)	249,800 acres (12%)	230,600 acres (11%)	66,700 acres (3%)
Class III	569,000 acres (27%)	392,800 acres (18%)	393,100 acres (18%)	509,100 acres (24%)	355,100 acres (17%)
Class IV	1,029,500 acres (48%)	1,288,300 acres (61%)	1,038,200 acres (49%)	941,400 acres (44%)	576,600 acres (27%)

* By BLM policy, WSAs are managed to meet VRM Class I objectives.

Environmental Consequences

Impacts to Visual Resources would result from actions proposed under the following resource management programs:

- Air Quality, Soil Resources, and Water Resources
- Vegetation and Fire and Fuels Management
- Cultural Resources
- Visual Resources
- Special Status Species
- Fish and Wildlife
- Non-WSA Lands with Wilderness Characteristics
- Livestock Grazing
- Recreation
- Travel Management
- Lands and Realty
- Minerals and Energy
- Special Designations

Other programs were determined to have little or no impact on visual resources.

Alternative N: No Action

Impacts from Air Quality, Soil Resources, and Water Resources

Implementing appropriate BMPs to minimize surface disturbance (Appendix 14) would reduce visual contrasts created by a variety of resource management projects. Both short- and long-term impacts would be localized. Actions to improve riparian and watershed condition in areas of moderate to severe erosion

would affect visual resources in a manner similar to those described under Impacts from Vegetation and Fire and Fuels Management.

Alternative N precludes surface-disturbing activities within 500 feet around natural springs, for the purpose of protecting water quality. This preclusion would also protect visual resources by retaining the existing character of the landscape in those areas.

Requiring the mitigation of impacts caused by fugitive dust during surface-disturbing projects would help maintain visual resource conditions.

Impacts from Vegetation and Fire and Fuels Management

Over the long term, restoration and vegetation treatments designed to improve ecological conditions could indirectly enhance visual resources, on a localized basis. However, in the short term, methods used to achieve improved ecological conditions could directly create visual changes to landscape form, line, color, and texture. Such impacts would range from minor to moderate, depending on the scope and magnitude of treatment and the methods used. Chemical and biological methods would tend to gradually create visual contrasts that mimic natural ecological change, whereas fire and mechanical methods would create such contrasts more suddenly and noticeably. Depending on the VRM class of the area in which a particular treatment is conducted, impacts to the landscape could either meet or not meet the visual objective for the class. For example, treatments that create moderate change in VRM Class III areas would likely meet the visual standard, whereas moderate change that attracts attention in a VRM Class I or II area would not. Alternative N allows for a full range of treatment methods (including mechanical, wildland or prescribed fire, and chemical methods). Some of the proposed treatment methods (e.g., mechanical, chemical) would result in localized, short-term impacts to visual resources, by creating visual contrasts.

Impacts to visual resources from prevention and mitigation programs aimed at reducing unwanted ignitions in wildland fire use and non-wildland fire use areas would be similar to those described for vegetation treatments. However, actions related to prevention could reduce human-caused ignitions and related visual impacts caused by fire. Post-fire rehabilitation methods, such as seed drilling, mulching, netting, or hydroseeding, could directly result in localized visual contrasts. Impacts would be minor to moderate in the short term but would become negligible in the long-term. Wildland fires and prescribed fires would result in smoke, causing short-term, minor-to-moderate impacts on visual resources. Such fires would also affect visual resources because of increased vehicle traffic, fire lines, and the contrast between burned and unburned areas. The latter could vary in size from a few acres to tens of thousands of acres.

Noxious weeds could affect visual resources to a minor degree by replacing native vegetation and creating changes in existing landscape form, color, or texture. Efforts to control or eliminate noxious weeds would reduce such impacts. Visual impacts created by the localized, small-scale collection or use of vegetative materials would be negligible. However, any vegetation removal associated with larger-scale research or restoration efforts could produce impacts similar to those described for mechanical vegetation treatments.

Impacts from Cultural Resources

The protective management of cultural resources would generally complement the maintenance of landscape character and the conservation of visual resources. When excavation or restoration measures involve surface- or vegetation-disturbing activities, noticeable contrast or reduced scenic quality ratings could result. Impacts would be direct, localized, and short term and would depend on the type, scope, and magnitude of the excavation or restoration and the amount of change that it would cause to existing landscape form, line, color, or texture. The potential for reducing or restricting public access to cultural

resources could reduce public opportunities to view some scenic resources. Such reduced opportunities would depend on the type and location of the restriction and its overlap with known scenic viewing locations.

Impacts from Visual Resources

Alternative N represents the VRM classes currently in place. Per BLM policy, WSAs would be managed as VRM Class I under all action alternatives, to preserve their scenic value. Areas managed as VRM Class I would experience little to no change to their landscape character and, thus, to their scenic value. Areas managed as VRM Class IV would allow for major modifications of the landscape.

Use of the VRM contrast rating process would continue to provide site-specific visual analysis of proposed surface-disturbing activities, to ensure that such projects meet visual objectives in project areas (through design features or mitigation). Both short- and long-term, indirect effects would accrue over the life of the Proposed RMP as management practices were constrained by the contrast rating process to sustain or enhance visual landscapes. Proposals would be required to mitigate impacts to scenic quality through project design (such as requiring new facilities to be painted to blend in with the surrounding landscape) and location and to conform to the designated VRM class objectives. Under Alternative N, actions to restore natural conditions or appearance in areas that were already modified may succeed on a localized basis, reducing some visual contrast in the long term.

Impacts from Special Status Species

Alternative N (along with all the other alternatives) prohibits actions that destroy, adversely modify, or fragment federally listed species habitat; proposes habitat improvements for SSS; and considers SSS habitat in all wildland fire suppression efforts.

The protective management prescribed for SSS (including those relating to riparian habitats, ACECs, and non-ACEC habitats) would generally complement the maintenance of landscape character and the conservation of visual resources. However, restoration measures that involve surface- or vegetation-disturbing components would create noticeable contrast or reduce scenic quality ratings. Such impacts would be direct and short term and could range from minor to moderate, depending on the type of treatment or restoration and the amount of change that it would cause to existing landscape form, line, color, or texture. Reducing or restricting public access in SSS habitats could reduce public opportunities to view some scenic resources. Impacts would be direct and long term and could range from negligible to moderate, depending on the type and location of the restriction and its overlap with known scenic viewing locations.

Impacts from Fish and Wildlife

Alternative N (along with all the other alternatives) includes provisions to avoid or reduce habitat fragmentation. These provisions could include collocating facilities, employing directional drilling, reclaiming redundant roads, reclaiming roads no longer serving their intended purpose, or using topographic and vegetation screening to reduce the influence of intrusions. These measures would generally complement the maintenance of landscape character and the conservation of visual resources. However, restoration measures that involve surface- or vegetation-disturbing components would create noticeable contrast or reduce scenic quality ratings. Such impacts would be direct and short term and could range from minor to moderate, depending on the type of treatment or restoration and the amount of change that it would cause to existing landscape form, line, color, or texture.

Constructing or modifying wildlife water developments could create visual contrasts with surrounding landscapes. Impacts would be localized and long term, depending on the placement, design, and use of native materials and the area's VRM class designation.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under Alternative N, resulting in no additional protection for visual resources.

Impacts from Livestock Grazing

Where livestock grazing would continue to be authorized (1,989,048 acres of the RFO), the installation of additional fences or livestock improvements (cattle guards, water developments, and roads necessary to access improvement sites) could directly impact visual resources by adding forms, lines, colors, and textures not found in the surrounding landscape. Such impacts would be localized, long term, and could range from negligible to moderate. Where livestock grazing would not be available (138,952 acres), the potential for these impacts would be eliminated, effectively maintaining visual resource integrity over the long term. Any removal of livestock facilities in these areas would enhance visual resources in the long term, by bringing the area back into its natural or near-natural condition.

Areas in which livestock tend to congregate would create contrasts that would be noticeable to the casual observer. These impacts would typically be long-term, direct, and localized. Implementing Utah's SRH would increase the potential for directly improving or enhancing visual resources.

Impacts from Recreation

Overall recreation guidance, ERMA management decisions, and the continued issuance of special recreation permits would not affect visual resources. No specific facilities are proposed, but any constructed would be based on needs for resource protection and user demand. New facilities or new types of commercial activities could result in changes to the landscape. However, specific projects are not identified at this time and therefore cannot be analyzed.

SRMAs would likely attract more visitor use to the RFO in the long term. Increased visitor use could generate localized visual contrasts in the form of dust from traffic, changes to camping areas, and potential impacts from illegal, off-road driving. More intensive management of these areas could enhance public access to scenic views and overlooks. SRMA management decisions could affect scenic resources. Under Alternative N, only a portion of the existing Yuba Reservoir SRMA would be within the RFO. However, this SRMA is administered by the Fillmore FO and is not analyzed in this Proposed RMP.

Recreational activities would have site-specific impacts near frequent and high-use areas such as campgrounds, parking lots, trailheads, and other recreation-related use areas. Long-duration trail use (e.g., walking, equestrian, OHV, mountain biking) could result in loss of vegetation cover, especially during wet periods, Large-group recreation events and camping could compact soils, leading to changes in plant vigor. These impacts would change the characteristic landscape and would be site-specific and localized. Dispersed recreation activities would create less impacts to visual resources than would these more intensive, concentrated recreation uses. Closing or rehabilitating undeveloped sites would restore the visual resources of those sites.

Impacts from Travel Management

The designation of OHV open areas could cause adverse impacts to landscapes and visual values. The level of use, season of use, type of soil, and vegetative community all could influence the amount of change to the landscape. Cross-country OHV use could result in visual contrasts in color because of disturbed soils and vegetation and contrasting linear disturbance on the landscape. The length of time observed and distance from important viewpoints could influence the perceived changes to the overall visual values.

Under Alternative N, 1,637,000 acres (75% of the RFO) would remain open to cross-country OHV use: 206,000 acres in VRM Class II; 489,000 acres in VRM Class III; and 942,000 acres in VRM Class IV. Although the landscape in many areas would not be impacted by cross-country use because of topographic and vegetation limitations, continuing to manage this large area as open would allow the greatest potential for changes to the landscape and impacts to scenic resources because of soil disturbance, tire tracks, and hill climbs, all of which would be inconsistent with the objectives for VRM Class II. The open OHV acreage is significantly higher in Alternative N than any of the other alternatives. There would be 214,000 acres (10% of the RFO) that would be closed to OHV use under this alternative (primarily within WSAs), precluding scenic impacts from OHV use on those lands.

Under Alternative N, motor vehicles would be limited to existing, designated, and maintained routes on 277,600 acres (13%) of the RFO. OHV routes create visible lines on the landscape. Depending on topography, the vegetation community, and observation point(s), those lines are visible to varying degrees. Further, removal of vegetation would reveal the underlying soil, which often contrasts with the surrounding vegetation in both color and texture. This contrast would further accentuate the change to the landscape. In those areas in which OHV use is limited to designated routes, management would limit impacts on the landscape to the existing transportation system and would eliminate the creation of new routes that would result in further changes to the landscape and visual quality. Alternative N would allow the use of 4,315 miles. The designation of existing routes would protect visual resources by reducing the potential for the creation of additional routes and changes to the landscape, such as soil disturbance, erosion, and loss of vegetation.

The potential for cross-country access to dispersed campsites to cause additional changes to the landscape would be greatest under Alternative N. Dispersed camping and cross-country access to these campsites would be allowed to take place anywhere outside the WSAs. Existing sites with access would continue to be used, but the number of these sites could increase under this alternative, causing changes to the landscape.

Impacts from Lands and Realty

Land tenure decisions include both the disposal and acquisition of land. The 203 Sales maps 2-21through 2-26 are in the map section of Volume III of the PRMP/FEIS. When public lands are disposed of, BLM no longer controls the scenery, and development could affect the visual qualities of adjoining public lands. Because it is unknown which lands (if any) might be sold, it is unknown whether those lands would be of high value because of visual interest. When BLM acquires lands, it also acquires responsibility for the scenery. Acquired lands would be managed according to VRM objectives on adjoining parcels. Under Alternative N, as much as 280 acres could leave federal ownership through FLPMA sales. Although BLM would no longer control the scenery on lands disposed of by FLPMA Section 203 sales, and although their development could create minor-to-major, long-term, direct, localized visual contrasts with the surrounding landscape, the lands identified for sale are usually isolated, difficult-to-manage parcels or are adjacent to developed areas in established communities. Therefore, these lands would have less potential of being high value for visual interest, so the potential for the loss of public viewing of scenic resources on these lands would be low.

Impacts to visual resources could result from issuance of land use authorizations (e.g., ROWs, permits, leases, easements). Impacts from issuance of these authorizations would vary based upon the nature and purpose of the authorization and the amount of change it would cause to existing landscape form, line, color, or texture. These authorizations could include a reduction in scenic quality ratings. Impacts generally would be minor to moderate and would be addressed in site-specific NEPA analysis. Under Alternative N, all ACECs (14,780 acres), eligible WSR corridors (12 segments—135 miles), areas closed to leasing (459,700 acres), and areas open to leasing subject to major constraints (NSO) (22,600 acres) would be managed as ROW avoidance areas. Exceptions would be granted only when the proposed

authorization would not create substantial surface disturbance or would create only temporary impacts. Thus, impacts to visual resources in these avoidance areas would be negligible to minor and localized.

When possible, new ROW and communication sites would be collocated in existing corridors or sites. Although such developments could change landscapes, collocating new development with existing facilities would protect undisturbed areas from visual intrusions.

If wind or solar energy were developed in the lands managed by the RFO, it would impact visual resources. Introducing large wind structures or solar arrays would be a noticeable change to the landscape. Under Alternative N, exploration and development would be considered on a case-by-case basis. Because of the potential for a great level of change to the landscape, these developments would be consistent only with VRM Class IV objectives.

Withdrawing lands from all forms of entry, location, selection, sale, or leasing under the public land laws could prevent major modification to the landscape. However, the identified withdrawals, if established, would be subject to valid existing rights, which could result in disturbance and associated impacts to visual resources in these areas. Alternative N proposes a total of 169,480 acres of withdrawals.

Impacts from Minerals and Energy

Leasable Minerals

Table 4-15 presents the RFD scenario for oil and gas for lands managed by the RFO. Under all alternatives, the RFD projects that 454 oil and gas wells would be developed within the planning area, which includes all land ownerships, during the next 15 to 20 years.

Table 4-15. Reasonably Foreseeable Development Scenario for Oil and Gas

Development Potential	Well Locations	# of Wells Predicted	Geophysical Surface Impacts	Well Surface Impacts	Total Surface Impacts
High (Area 4) Western Sevier and Sanpete Counties	BLM 45% Private 40% USFS 10% State 5%	360	4,500 acres	540 acres	5,040 acres
Moderate (Area 3) Eastern Sevier and Sanpete Counties	USFS 100% (Fishlake and Manti-LaSal National Forests)	49	360 acres	1,100 acres	1,460 acres
Low (Areas 1 & 2) Piute, Wayne, eastern Garfield, and southern Sevier Counties	BLM 100%	45	240 acres	1,440 acres	1,680 acres
Totals		**454**	**5,100 acres**	**3,080 acres**	**8,180 acres**

In the area with high development potential (western Sevier and Sanpete Valleys), the construction of roads, well pads, and other facilities would add further developments to a moderately altered landscape. These agricultural valleys consist of cultivated fields, roads, and rural towns bordered by rolling hills and mountains. Many of the developments would be visible and would attract attention, which would result in changes to the existing visual resources.

The area with moderate development potential (eastern Sevier and Sanpete Counties) generally has a natural-appearing landscape but allows for screening of most projects because of topography and vegetation. Road construction in these areas could require more cutting and filling, which would be more visible on the landscape. However, this area would still contain relatively few wells, with few disturbance acres spread over a large area, resulting in minimum impacts to visual resources.

The area with low development potential is generally more remote, with natural-appearing landscapes, and visitors may be more sensitive to landscape changes. Therefore, a few wells spread over such a large area would have a minimal impact on visual resources. The overall landscape character and vistas would not change.

Locatable Minerals

Exploration and development of locatable minerals create surface disturbances that could adversely impact visual resources. Impacts to visual resources would be unavoidable because of major surface-disturbing activities to mine for the mineral sources. However, little development of locatable minerals is expected during the next 15 to 20 years.

Withdrawals would reduce the amount of land open to disturbance. Alternative N proposes a total of 169,480 acres of withdrawals. See Impacts from Lands and Realty for a discussion of withdrawals.

Salable Minerals

Salable minerals are under the same restrictions as oil and gas resources. The same lands that are open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU) would be available for salable mineral disposal, just as those lands that are either closed to leasing or open to leasing subject to major constraints (NSO) would be unavailable for salable mineral disposal. Under Alternative N, 459,700 acres would be closed to disposal of mineral materials and 169,480 would be withdrawn from mineral entry. Closing or withdrawing areas from mineral operations would prevent impacts to scenery because no surface-disturbing activities associated with mining of salable minerals would be allowed in those areas.

Impacts from Special Designations

Wilderness Study Areas

Managing WSAs under the IMP would prevent most ground-disturbing activities. This management would contribute to preservation of the existing landscape character to a major degree over the long term.

Wild and Scenic Rivers

Protecting the outstandingly remarkable values of the eligible WSRs would help protect visual resources by preventing ground-disturbing activities that would impact the scenic character in the river corridors. Under Alternative N, all eligible segments (12 segments—135 miles) would be managed to protect their outstandingly remarkable values, free-flowing nature, and tentative classification. This management would preserve the existing character of the landscape in these areas.

Areas of Critical Environmental Concern

Although ACEC designation alone does not necessarily provide protection, the management actions included in ACECs are often more restrictive, thus indirectly providing protection for visual resources. Protections associated with ACEC designation that would affect visual resources include managing oil and gas leasing as closed to leasing or open to leasing subject to major constraints (NSO), implementing more-restrictive VRM designations, restricting livestock grazing to protect relict vegetation and ecologic (riparian) values, and limiting travel limitations. Alternative N continues the designation of four ACECs

(14,780 acres). Scenery was not one of the relevant and important values identified for these ACECs. However, allowing no uses that would cause irreparable damage to the relevant and important values in these areas would reduce surface-disturbing activities within those areas and thus protect visual resources. Such disallowance could include closing the areas to OHV use; managing the area as either closed to leasing or open to leasing subject to major constraints (NSO), depending on the ACEC; making the area unavailable for livestock grazing in ACECs with relict vegetation and ecologic relevant and important values; and acquiring inholdings.

Alternative A

Impacts from Air Quality, Soil Resources, and Water Resources

Impacts would be the same as those described under Alternative N. However, under Alternative A, the buffer zone of areas closed to leasing subject to major constraints (NSO) around springs would be 330 feet. Therefore, this alternative would protect a smaller area (8 acres) from changes to the characteristic landscape than would Alternative N (18 acres).

Impacts from Vegetation and Fire and Fuels Management

The types of impacts experienced as a result of vegetation and fire and fuels management would be similar to those described under Alternative N, although under Alternative A, maximum treatment acreage limits would be set (averaging 73,600 annually for all treatments). Although no maximum treatment acreage limits would be set under Alternative N, more acres probably would be treated under that alternative because it allows for the full range of fire and fuels management actions to achieve ecosystem sustainability and allows for a full suite of treatment methods (including mechanical, wildland fire use or prescribed fire, and chemical methods). Alternative A incorporates more mechanical treatment than does Alternative N or the Proposed RMP.

Potential visual effects that could result from a severe wildfire include loss of trees, blackening of the landscape, and blackened deadfall, including the disruption of line and form caused by ground-disturbing activities. Large areas, including areas in VRM Classes I and II, could be blackened and charred, and large amounts of smoke could be produced.

Impacts from Cultural Resources

Under Alternative A, all cultural properties in the RFO are allocated to one of six uses (scientific, conservation, traditional, public, experimental, or discharged from management). These use allocations pertain to the cultural resources themselves rather than to areas of land, so impacts that management of cultural resources would cause to visual resources would be similar to those described for Alternative N. However, under Alternative A, the majority of cultural resource site types would be allocated to public use, thereby providing increased public access to cultural resources and increased public opportunities to view these resources.

Impacts from Visual Resources

VRM class designations vary by alternative (Table 4-14). Under Alternative A, all areas outside of WSAs would be designated as VRM Class III or Class IV. These designations mean that there could be moderate changes to the landscape (on 392,800 acres designated as Class III) or major changes to the existing character of the landscape (on 1,288,300 acres designated as Class IV). Of all the alternatives, Alternative A could have the most impact on visual resources.

Impacts from Special Status Species

The types of impacts experienced as a result of SSS management would be similar to those described under Alternative N. However, Alternative A includes additional strategies to avoid or reduce

fragmentation of habitat. These strategies could include employing directional drilling for oil and gas, closing and reclaiming roads, mitigating the effects of proposed projects that could cause long-term or permanent impacts or losses of habitat, and using species-specific buffers for surface-disturbing activities. All these actions would reduce surface disturbance and reduce the potential for invasion and spread of invasive species, thereby helping to maintain the visual character of the landscape.

Impacts from Fish and Wildlife

Impacts would be the same as those described under Alternative N.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under Alternative A, resulting in no additional protection for visual resources.

Impacts from Livestock Grazing

Impacts would be essentially the same as those described under Alternative N, except that under Alternative A, an additional 36,950 acres (less than 1% of the RFO) would be available for livestock grazing. Installation of additional fences or livestock improvements (cattle guards, water developments, and roads necessary to access improvement sites) on these acres could directly impact visual resources by adding forms, lines, colors, and textures not found in the surrounding landscape. Such impacts would be localized, long-term, and could range from negligible to moderate. Where livestock grazing would not be available (102,002 acres), the potential for the these impacts would be eliminated, effectively maintaining visual-resource integrity over the long-term. Any removal of livestock facilities in these areas would enhance visual resources in the long term by bringing the area back into its natural or near-natural condition.

Impacts from Recreation

The types of impacts experienced as a result of recreation management decisions would be similar to those described for Alternative N. However, under Alternative A, SRMAs would be established that provide for cross-country OHV activities at Otter Creek (the west side of the reservoir), Big Rocks, Factory Butte, and Sahara Sands. Allowing cross-country activities and providing necessary facilities would enhance and probably increase use in these areas, resulting in changes to the landscape (developments such as staging areas, restrooms, and increased vehicle tracks). Terrain, soils, season of use, and distance from main travel routes would influence the noticeability of these changes. To be consistent with these uses, these areas would be designated as VRM Class IV.

The Dirty Devil/Robbers Roost SRMA (290,000 acres) would be established to provide for recreational experiences complementary with the remote and scenic nature and other resource values of the area. No site developments, or only the minimum required for site protection, and no onsite interpretive facilities would be proposed for this area. The management objectives for this SRMA would help preserve the landscape characteristics in this area.

Impacts from Travel Management

The designation of OHV open areas can cause adverse impacts to landscapes and visual values. The level of use, season of use, type of soil, and vegetative community influence the amount of change to the landscape. The length of time observed and distance from important viewpoints can influence the perceived changes to the overall visual values.

Under Alternative A, 449,000 acres (21% of the RFO) would remain open to cross-country OHV use. The open OHV acreage is significantly less under this alternative than under Alternative N, but substantially greater than under Alternative C or D or the Proposed RMP. Although topographic and vegetation

limitations in some areas would prevent impacts by cross-country use, continuing to manage this large area as open would allow the greatest potential for changes to the landscape and impacts to scenic resources as a result of soil disturbance, tire tracks, and hill climbs.

Areas not designated as open to OHV use would be limited to designated routes, thereby minimizing impacts to visual resources on the 1,679,000 acres within the limited category. Limiting vehicles to designated routes would reduce the potential for additional changes to the landscape, such as soil disturbance, erosion, and loss of vegetation, although intermittent dust from use of these unpaved routes and visibility of lines in the landscape would still be apparent. The potential impacts identified in Alternative N from cross-country motorized access to dispersed campsites would not be present under Alternative A on the areas designated as limited to OHV use—vehicles on existing spur routes to established campsites would be allowed within 300 feet of the centerline of designated routes. No new campsites or travel ways would be authorized, resulting in no effect to visual resources.

Under Alternative A, no lands would be closed to OHV use, with no accompanying benefits to visual resources.

Impacts from Lands and Realty

The types of impacts experienced as a result of land tenure adjustments under Alternative A would be similar to those described under Alternative N, except that as much as 13,460 acres could potentially leave federal ownership through FLPMA Section 203 sales. Although the BLM would no longer control the scenery on lands disposed of by Section 203 sales and their development could create minor-to-major, long-term, direct, localized visual contrasts with the surrounding landscape, the lands identified for sale are usually isolated, difficult-to-manage parcels or are adjacent to developed areas in established communities. These lands therefore would have less potential of being of high value for visual interest, so the potential for the loss of public viewing of scenic resources on these lands would be low.

Under Alternative A, there would be no new withdrawals from mineral entry considered and therefore no additional benefits to scenic resources, compared to Alternative N.

The types of impacts experienced as a result of issuing lands use authorizations would be similar to those described under Alternative N, although impacts could occur over a larger area because less acres would be proposed for ROW avoidance areas (446,900 acres closed to leasing).

Wind or solar energy development would be considered throughout the lands managed by the RFO, except for WSAs (VRM Class I). Introducing large wind structures and solar arrays would be a noticeable change to the landscape. Because of the potential for a high level of change to the landscape, these developments would be consistent only with VRM Class IV objectives (1,288,300 acres, or 61% of the RFO). Introducing these developments in VRM Class II and III areas would be inconsistent with the objectives for those VRM classes, and would therefore adversely affect visual resources. Alternative A would have the greatest potential impact to visual resources.

Impacts from Minerals and Energy

Leasable Minerals

The types of impacts experienced as a result of leasable minerals development would be similar to those described under Alternative N. Development of oil and gas resources could affect scenic landscapes because of the surface disturbances associated with such development. However, designating areas as closed to leasing (446,900 acres) and designating fewer acres than Alternative N as open to leasing subject to major constraints (NSO) (0 acres) would provide less protection to visual resources by precluding fewer surface-disturbing activities.

Locatable Minerals

The types of impacts experienced as a result of locatable minerals activities would be similar to those described under Alternative N, except Alternative A recommends fewer acres of mineral withdrawals (154,700 acres). Thus, impacts associated with locatable minerals mining could occur over a larger area of the RFO.

Salable Minerals

The types of impacts experienced from disposal of salable minerals would be similar to those described under Alternative N, except that Alternative A proposes fewer acres of mineral withdrawals (154,700 acres), fewer areas closed to salable mineral disposal (446,900 acres), and fewer areas open with restrictions (0 acres). Thus, impacts associated with disposal of salable minerals could occur over a larger area of the RFO.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Under Alternative A, no eligible river segments would be recommended as suitable. No special management to protect the outstandingly remarkable values of these rivers would be provided, so visual resources within these corridors would not be protected by WSR designation from ground-disturbing activities in the river corridors. However, most of the eligible river segments (98 of the 135 total miles) are also within WSAs, so ground-disturbing activities would not occur in those river corridors and the scenic landscape would be protected.

Areas of Critical Environmental Concern

Alternative A designates no ACECs, so no special management (e.g., managing oil and gas leasing as closed to leasing or open to leasing subject to major constraints (NSO), more restrictive VRM designations, travel limitations) to protect the scenic landscape is proposed. Allowing surface- disturbing uses that could cause irreparable damage to the relevant and important values in these areas could impact visual resources.

Proposed RMP

Impacts from Air Quality, Soil Resources, and Water Resources

Impacts would be the same as those under Alternatives N and A, (as described under Alternative N). The Proposed RMP would have a buffer zone of 330 feet on each side of the waterway or 100 yard flood plain whichever is greater, potentially offering more protection than Alternative N or A.

Impacts from Vegetation and Fire and Fuels Management

Under the Proposed RMP, vegetation treatment strategies that are consistent with managing scenic quality on public land would be implemented. These treatments would reduce the risk of severe wildfire that could potentially affect all visual classes and result in impacts on visual resources. Large, severe wildfires change the landscape in a way that could degrade visual quality, especially on fragile soils on which the duration of erosion impacts may be longest.

Allowing fire to resume a more natural, ecological role across the landscape may constitute a short-term conflict between ecological sustainability and scenic aesthetics. However, recent studies have shown public support for controlled burns and other fuels-reduction methods to reduce the risk of larger,

uncontrolled burns (USDA 2003). Resource values and short-term visual impacts versus long-term improvement in visual character of the landscape would be considered in planning fire and fuels management activities.

Impacts from Cultural Resources

Impacts would be similar to those described under Alternative A. However, under the Proposed RMP, fewer sites would be allocated to public use, thus providing decreased public access to cultural resources and decreased public opportunities to view these resources.

Impacts from Visual Resources

Under the Proposed RMP, 446,900 acres (21% of the lands managed by the RFO) would be designated as VRM Class I; 249,800 acres (12%) would be designated as VRM Class II; 393,100 acres (18%) would be designated as VRM Class III; and 1,038,200 acres (49%) would be designated as VRM Class IV. Designating the majority of the RFO as VRM Class III or IV could result in large areas of moderate-to-major modifications in the existing character of the landscape. However, under the Proposed RMP, less of the RFO would be designated in these VRM classes than under Alternative N or A, resulting in less potential impacts to visual resources, compared to those alternatives.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative A.

Impacts from Fish and Wildlife

Impacts would be the same as those described under Alternative N.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under the Proposed RMP, 78,600 acres in 12 areas would be managed to protect their wilderness characteristics (size, naturalness, opportunities for solitude, and opportunities for primitive forms of recreation). These lands would be designated as VRM Class II, to retain the existing character of the landscape. These areas would be managed to minimize surface-disturbing activities, thus preventing changes to the characteristic landscape (vegetation, landform, and water) and protecting the scenic quality of these lands.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

The types of impacts that would be experienced under the Proposed RMP would be similar to those described under Alternative A. Under the Proposed RMP, established SRMAs would provide for cross-country OHV activities at Factory Butte and Big Rocks. Management actions would focus on the OHV activities in these areas and the development of facilities to support the motorized activities. Allowing cross-country activities and providing necessary facilities would enhance and probably increase use in these areas, which would result in changes to the landscape (developments such as staging areas, restrooms, and increased vehicle tracks). Terrain, soils, season of use, and distance from main travel routes would influence how noticeable these changes are. These changes would be more apparent at Factory Butte than Big Rocks because of the terrain and proximity to a main highway.

The kiosks and loading/unloading ramps in the Factory Butte SRMA (Appendix 18) would be screened from Highway 24 by low hills in the foreground. They would be seen for only a few seconds, if at all, by highway traffic. For motorized visitors using the open OHV area, the noticeability of the improvements

would vary, depending on the visitor's vantage point. The upgraded entrance, kiosk, and ramps would be noticeable as visitors enter the area and use these facilities. As visitors travel further into the area, the improvements would not be as noticeable from a distance. From many locations within the open area, the structures would be partially or often totally hidden because of terrain. The fences would be most noticeable to riders as they approach these boundaries. For safety reasons, the fences must be noticeable enough to keep riders from running into them. These improvements would be seen but would not dominate the landscape or attract the attention of visitors unless the visitors were in close proximity to the structures.

Although various structures are planned within VRM Class II and Class III areas, topographic screening would be used whenever possible. Elements would be added to the landscape, but would not be expected to dominate the landscape or view. No changes to the overall landform or vegetation would occur. The contrast caused by the addition of structures would be moderate to weak for some elements of the landscape and would be nonexistent for other elements. The added facilities in the Factory Butte SRMA would be consistent with VRM Class II and Class III objectives in as much as improvements would be seen but only for short durations and should not attract the attention of the casual observer. The majority of the improvements would be located in areas designated as VRM Class IV. The proposed actions at these sites would be consistent with this VRM class. None of the improvements would require major modification of the existing character of the landscape.

The Capitol Reef Gateway SRMA would be established to manage recreation opportunities associated with Capitol Reef National Park, while protecting the values of the Fremont Gorge WSA and WSR segment. In this SRMA, there would be 2,900 acres in VRM Class I; 2,300 acres in Class II; and 7,600 acres in Classes III and IV. Facilities would be allowed to reduce resource impacts. Although the addition of facilities would introduce change into the landscape, the placement of facilities would be required to meet VRM objectives. The planned development of facilities could reduce impacts currently taking place from uncontrolled, dispersed use.

The Henry Mountains SRMA would be established under the Proposed RMP. The management of Class A scenery outside WSAs as VRM Class II would be beneficial in retaining the visual character of these areas because only low levels of changes to the landscape can occur in Class II areas.

Impacts from Travel Management

Under the Proposed RMP, less than 1% of the RFO (9,390 acres) would remain open to cross-country OHV use. Potential impacts to visual resources could occur within the open area because of a higher concentration of users in a much smaller area. Cross-country use and indications of motorized use on the landscape (including soil disturbance and loss of vegetation) would continue and likely increase on these acres. However, the total acres open to OHV use would be significantly less than under Alternative N.

Under the Proposed RMP, approximately 10% of the RFO (209,900 acres) would be closed to OHV use (primarily within WSAs), precluding scenic impacts from OHV use on those lands.

The remainder of the RFO lands (1,908,210 acres) would limit motor vehicles to designated routes. OHV use within these areas would be restricted to 4,277 miles of designated routes and would reduce the potential for additional changes to the landscape, such as soil disturbance, erosion and loss of vegetation. The number of designated route miles would be fewer than under Alternative N or A, resulting in less intermittent dust from use of these unpaved routes.

The potential impacts identified in Alternative N from cross-country access to dispersed campsites and for parking/staging would be greatly reduced under the Proposed RMP (and could occur only on the 9,390 acres open to OHV use). Vehicle access within areas limited to designated routes would be allowed on

existing spur routes to established campsites within 150 feet of the centerline of designated routes; vehicles would also be allowed to pull off designated routes up to 50 feet of each side of the centerline for parking/staging. By restricting motorized use, both of these actions would restrict potential effects to the visual landscape of those areas.

Impacts from Lands and Realty

The types of impacts experienced as a result of land tenure adjustments under the Proposed RMP would be the same as those described under Alternative A.

The types of impacts experienced as a result of issuing lands use authorizations would be similar to those described under Alternative A. However, under the Proposed RMP, impacts could occur over a smaller area because more acres would be proposed for ROW avoidance areas (601,800 acres closed to leasing or open to leasing subject to major constraints [NSO], one suitable WSR segment—5 miles, and 2 ACECs—2,530 acres).

If wind or solar energy was developed in the lands managed by the RFO, it would impact visual resources. Introducing large wind structures and solar arrays would be a noticeable change to the landscape. Under the Proposed RMP, exploration and development would be considered on a case-by-case basis. Because of the potential for a high level of change to the landscape, these developments would be consistent only with VRM Class IV objectives and would be allowed only in those areas (49% of the RFO).

Withdrawing lands from all forms of entry, location, selection, sale, or leasing under the public land laws could prevent major modification to the landscape. However, the identified withdrawals, if established, would be subject to valid existing rights, which could result in disturbance and associated impacts to visual resources in these areas. The Proposed RMP proposes a total of 176,200 acres of withdrawals.

Impacts from Minerals and Energy

Leasable Minerals

The types of impacts experienced as a result of leasable minerals decisions would be similar to those described under Alternative N.

Locatable Minerals

The types of impacts experienced as a result of locatable minerals decisions would be similar to those described under Alternative N. However, the Proposed RMP proposes more acres of mineral withdrawals (176,200 acres) than does Alternative N or A, precluding mining activities in those areas and thus allowing less disturbance to the visual landscape.

Salable Minerals

The types of impacts experienced as a result of salable minerals decisions would be similar to those described under Alternative N. However, under the Proposed RMP, more lands would be closed to disposal of salable minerals or open to salable mineral disposal with restrictions (601,800 acres would be closed to disposal of mineral materials; 1,072,000 acres would be open with restrictions to reduce ground disturbance; and 176,200 acres would be withdrawn from mineral entry). Closing or withdrawing areas from mineral operations would prevent impacts to scenery.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Protecting the outstandingly remarkable values of the suitable WSRs would help protect visual resources by preventing ground-disturbing activities in the river corridors. Under the Proposed RMP, one segment with a tentative classification of Wild (5 miles) would be managed as suitable to protect its outstandingly remarkable values, free-flowing nature, and wild classification, thus preserving the existing character of the landscape in that area. This leaves 32 miles on which ground-disturbing activities could impact the scenic landscape. Under the Proposed RMP, WSR decisions would provide less protection to visual resources than under Alternative N, C, or D but more protection than under Alternative A.

Areas of Critical Environmental Concern

The types of impacts experienced as a result of ACEC designations would be similar to those described under Alternative N, except that the Proposed RMP designates fewer areas as ACECs (two areas, totaling 2,530 acres). Scenery was not one of the relevant and important values identified for these ACECs (North Caineville Mesa and Old Woman Front). However, management actions included in ACEC management are often more restrictive, thus indirectly providing protection for visual resources. Protections associated with designation of these ACECs for the protection of the relict vegetation relevant and important values that would affect visual resources include recommending the lands for withdrawal from mineral entry, managing oil and gas leasing as open subject to major constraints (NSO), authorizing no new facilities or improvements, acquiring inholdings, closing the lands to forestry and woodland products harvesting, restricting livestock grazing, and closing the lands to OHV use. All these actions would reduce surface-disturbing activities within those areas and indirectly protect visual resources.

Alternative C

Impacts from Air Quality, Soil Resources, and Water Resources

Impacts would be the same as those described under Alternative N. However, under Alternative C, the buffer zone of lands open to leasing subject to major constraints (NSO) around springs would be 660 feet, thus protecting a larger area (34 acres, compared with 18 acres under Alternative N) from changes to the characteristic landscape.

Impacts from Vegetation and Fire and Fuels Management

The types of impacts experienced as a result of vegetation and fire and fuels management would be similar to those described under Alternative A, although under Alternative C, fewer acres would be treated annually (averaging 26,000 annually for all treatments). In addition, this alternative proposes using only natural processes (biological and fire) to manage vegetation. These processes could be less effective than conventional vegetation treatments and would not be effective in all vegetation communities. The result could be the loss of existing vegetation cover or longer timeframes for treated areas to blend in with surrounding areas, resulting in changes in the characteristic landscape lasting for a long period. This management could also make control of some invasive species difficult because of lack of suitable substitute treatments (using fire as a control tool for species including tamarisk could increase the growth and spread of this non-native species), possibly allowing the spread of invasive species and displacement of desirable vegetation and resulting in a less natural appearance. Thus, impacts to visual resources under Alternative C would likely result in reduced short-term impacts (because fewer acres would be treated) but increased long-term impacts, compared to Alternative A.

Impacts from Cultural Resources

Impacts would be similar to those described for the Proposed RMP, except that more sites would be allocated to conservation use under Alternative C. This allocation would provide decreased public access to cultural sites and decreased public opportunities to view these resources.

Impacts from Visual Resources

The types of impacts experienced as a result of VRM decisions would be similar to those described under Alternative N. Under Alternative C, 446,900 acres (21% of the lands managed by the RFO) would be designated as VRM Class I; 230,600 acres (11%) would be designated as VRM Class II; 509,100 acres (24%) would be designated as VRM Class III; and 941,400 acres (44%) would be designated as VRM Class IV. Alternative C designates all Class A scenery within ACECs as VRM Class II, thus protecting the scenic quality in those areas.

Designating the majority of the RFO as VRM Class III or IV could result in large areas of moderate-to-major modifications in the existing character of the landscape and could allow greater flexibility for vegetation treatments. However, less of the RFO would be designated in these VRM classes under Alternative C than under Alternative N or A or the Proposed RMP, resulting in less potential impacts to visual resources as compared to those alternatives.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative A.

Impacts from Fish and Wildlife

Impacts would be the same as those described under Alternative N.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under Alternative C, resulting in no additional protection for vegetation.

Impacts from Livestock Grazing

Impacts would be the same as those described under the Proposed RMP.

Impacts from Recreation

Under Alternative C, the Dirty Devil/Robbers Roost SRMA (375,800 acres) would be established to provide for recreational experiences complementary with the remote and scenic nature and other resource values, notably the ACEC values, of the area. The SRMA would be 85,300 acres larger than under the Proposed RMP, and would have more emphasis on primitive recreation opportunities. No site developments, or only the minimum required for site protection, and no onsite interpretive facilities would be proposed for this area. The VRM management objectives for this SRMA (205,200 acres in VRM Class I; 48,700 acres in VRM Class II; and 121,900 in VRM Classes III and IV) would help preserve the landscape characteristics in this area.

The Capitol Reef Gateway SRMA would be established to manage recreation opportunities associated with Capitol Reef National Park, while protecting the values of the Fremont Gorge WSA, WSR segment, and Fremont Gorge/Cockscomb ACEC. No interior site developments or onsite interpretation facilities would be allowed. Only the minimum developments required for site protection would be provided. The management objectives for this SRMA would help preserve the landscape characteristics in this area. There are 2,900 acres in VRM Class I; 2,300 acres in VRM Class II; and 7,600 acres in VRM Class III (no acres in Class IV).

Under Alternative C, the Henry Mountains SRMA would be established and managed in concert with the Henry Mountains ACEC. The management of Class A scenery as VRM Class II would be beneficial in retaining the visual character of these areas.

Sevier Canyon SRMA would be managed to protect the scenic values in and around the Sevier Canyon. Management of this SRMA in concert with the Sevier Canyon ACEC would help preserve the landscape characteristics in this area.

Impacts from Travel Management

Under Alternative C, no acres would be open to cross-country OHV use, thus protecting the visual resources throughout the RFO from potential impacts caused by cross-country motorized use (soil disturbance and loss of vegetation). Thirty-two percent of the RFO (683,000 acres) would be closed to OHVs under this alternative, precluding scenic impacts from OHV use on those lands.

Areas not designated as closed to OHV use would be limited to designated routes, thus protecting visual resources on the 1,445,000 acres within the limited category (no areas would be open to OHV use under this alternative). OHV use within these areas would be restricted to 3,192 miles of designated routes and would reduce the potential for additional changes to the landscape, such as soil disturbance, erosion, and loss of vegetation. The number of designated route miles would be less than under Alternative N or A or the Proposed RMP but more than Alternative D.

Impacts from Lands and Realty

The types of impacts experienced as a result of land tenure adjustments under Alternative C would be similar to those described under Alternative A, except that less land would be available for disposal under Alternative C. This alternative identifies no lands for FLPMA land sales; lands could be disposed of by other means (such as exchange) if the land tenure adjustment met the goals and objectives of Alternative C, such as resulting in a net increase of sensitive resources.

The types of impacts experienced as a result of issuing lands use authorizations would be similar to those described under Alternative A. However, under Alternative C, impacts could occur over a smaller area because more acres are proposed as ROW avoidance areas (735,000 acres closed to leasing or open to leasing subject to major constraints [NSO], 12 suitable WSR segments—135 miles, and 16 ACECs—886,810 acres).

Withdrawing lands from all forms of entry, location, selection, sale, or leasing under the public land laws could prevent major modification to the landscape. However, the identified withdrawals, if established, would be subject to valid existing rights, which could result in disturbance and associated impacts to visual resources in these areas. Alternative C proposes a total of 331,100 acres of withdrawals.

Wind or solar energy development would be considered on all RFO lands that are designated as VRM Class IV (the only class that allows major modifications to the landscape). This designation would give some protection to the landscape character in VRM Class I, II, and III areas. This kind of development would still be noticeable in VRM Class IV lands, but would be consistent with the VRM objectives for that class.

Impacts from Minerals and Energy

Leasable Minerals

The types of impacts experienced as a result of leasable minerals decisions would be similar to those described under Alternative N.

Locatable Minerals

The types of impacts experienced as a result of locatable minerals decisions would be similar to those described under Alternative N. However, Alternative C proposes more acres of mineral withdrawals

(331,100 acres) than does Alternative N or A or the Proposed RMP, thus precluding mining activities in those areas and allowing less modification to the landscape.

Salable Minerals

The types of impacts experienced as a result of salable minerals decisions would be similar to those described under Alternative N. However, under Alternative C, more lands would be closed to disposal of salable minerals or open to salable mineral disposal with restrictions (586,300 acres would be closed to disposal of mineral materials; 1,049,800 acres would be open with restrictions to reduce ground disturbance; and 331,100 acres would be withdrawn from mineral entry). Closing or withdrawing areas from mineral operations would prevent impacts to scenery by allowing less modification to the landscape.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Protecting the outstandingly remarkable values of the eligible WSRs would help protect visual resources by preventing ground-disturbing activities in the river corridors. Under Alternative C, all eligible segments (12 segments—135 miles) would be managed to protect their outstandingly remarkable values, free-flowing nature, and tentative classification. This management would preserve the existing character of the landscape in these areas.

Areas of Critical Environmental Concern

Alternative C designates 16 ACECs (886,810 acres); scenery was specifically identified as a relevant and important value in 7 of these (Badlands, Dirty Devil, Fremont Gorge/Cockscomb, Henry Mountains, Horseshoe Canyon, Little Rockies, and Lower Muddy Creek). To protect the visual resources in these ACECs, the Class A scenery would be designated as VRM Class II. Vegetation management was identified as a management prescription in the Henry Mountains ACEC, to provide improved habitat for bison and mule deer, both identified as relevant and important values. Allowing no uses (in all ACECs except for the Henry Mountains) that would cause irreparable damage to the relevant and important values would reduce surface-disturbing activities within those areas, protecting vegetation and improving ecological condition of riparian areas. Possible disallowances include closing the areas to OHV use; managing the areas as either closed to leasing or open to leasing subject to major constraints (NSO), depending on the ACEC; designating the areas as VRM Class II; making the areas unavailable for livestock grazing as appropriate to protect relict vegetation and ecological values, or fencing riparian areas in ACECs where grazing occurs; and acquiring inholdings. However, opportunities for vegetation treatments could be limited, which could inhibit or prevent attainment of ecological objectives and desired conditions in these areas.

Alternative D

Impacts from Air Quality, Soil Resources, and Water Resources

Impacts would be the same as those described under Alternative N.

Impacts from Vegetation and Fire and Fuels Management

Impacts would be the same as those described under Alternative C.

Impacts from Cultural Resources

Impacts would be the same as those described under Alternative C.

Impacts from Visual Resources

The types of impacts experienced as a result of VRM decisions would be similar to those described under Alternative N, although under Alternative D, these impacts would occur over a much smaller area because of differences in VRM class designations between the two alternatives. Under Alternative D, 1,129,600 acres (53% of the lands managed by the RFO) would be designated as VRM Class I; 66,700 acres (3%) would be designated as VRM Class II; 355,100 acres (17%) would be designated as VRM Class III; and 576,600 acres (27%) would be designated as VRM Class IV. Just more than half of the RFO would be designated as VRM Class I or II, meaning that the existing character of the landscape must be preserved or retained. Thus, surface-disturbing activities would generally not be allowed in these areas, resulting in retention of the characteristic landscape. Therefore, Alternative D would result in less impacts to scenery than would Alternative N, A, or C or the Proposed RMP.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative A.

Impacts from Fish and Wildlife

Impacts would be the same as those described under Alternative N.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under Alternative D, 682,600 acres in 29 areas would be managed to protect their wilderness characteristics (size, naturalness, opportunities for solitude, and opportunities for primitive forms of recreation). These lands would be designated as VRM Class I to preserve the characteristic landscape. These areas would be closed to surface-disturbing activities, thus preventing changes to the characteristic landscape (vegetation, landform, and water) and protecting the scenic quality of these lands.

Impacts from Livestock Grazing

Impacts would be the same as those described under the Proposed RMP.

Impacts from Recreation

Impacts would be similar to those described under Alternative C, with the exception that three additional SRMAs (with a combined acreage of 266,400 acres) would be established: Labyrinth Canyon, Little Rockies, and San Rafael Swell. These SRMAs would be established to provide for recreational experiences complementary with the remote and scenic nature and other resource values of the area. No site developments, or only the minimum required for site protection, and no onsite interpretive facilities would be proposed for this area. The management objectives for this SRMA would help preserve the landscape characteristics in this area.

Impacts from Travel Management

Under Alternative D, no acres would be open to cross-country OHV use, so the visual resources throughout the RFO would be protected from potential impacts from cross-country motorized use (including soil disturbance and loss of vegetation). Under Alternative D, 1,155,200 acres (54% of the RFO) would be closed to OHVs, precluding scenic impacts from OHV use on those lands. This alternative would designate the most area as closed to OHV use, thus providing the most protection to visual resources.

The remainder of the RFO (972,800 acres) would limit motorized travel to designated routes. OHV use within these areas would be restricted to 3,043 miles of designated routes, thus reducing the potential for additional landscape changes such as soil disturbance, erosion, and loss of vegetation. The number of designated route miles would be least under Alternative D of all the alternatives.

Impacts from Lands and Realty

Under Alternative D, 903,900 acres (42% of the RFO) would be recommended for withdrawal from mineral entry including:

- Rainbow Hills ACEC, Old Woman Front ACEC, and portions of the remaining ACEC
- All 12 eligible WSR segments
- All non-WSA lands with wilderness characteristics.

Withdrawing lands from all forms of entry, location, selection, sale, or leasing under the public land laws could prevent major modification to the landscape. However, the identified withdrawals, if established, would be subject to valid existing rights, which could result in disturbance and associated impacts to visual resources in these areas. Scenic values would be best protected under Alternative D because the most acreage would be withdrawn from future entry, location, selection, sale, or leasing.

Wind or solar energy development would be considered on all RFO lands that are designated as VRM Class IV (the only class that allows major modifications to the landscape). This would give some protection to the landscape character in VRM Class I, II, and III areas. The introduction of this kind of development would still be noticeable in VRM Class IV lands, but would be consistent with the VRM objectives for that class.

Potential impacts that lands and realty decisions could have on visual resources would be the least under Alternative D.

Impacts from Minerals and Energy

Leasable Minerals

The types of impacts experienced as a result of leasable minerals decisions would be similar to those described under Alternative N. However, under Alternative D, impacts would occur over a much smaller area because more areas would be closed to leasing or open to leasing subject to major constraints (NSO) (1,203,800 acres). Designating areas as closed to leasing would prevent changes to the characteristic landscape (vegetation, landform, and water) and protect the scenic quality of these lands. Impacts to visual resources from leasable minerals activities would be much less under Alternative D, compared to all the other alternatives.

Locatable Minerals

The types of impacts experienced as a result of locatable minerals decisions would be similar to those described under Alternative N. However, Alternative D proposes substantially more acres of mineral withdrawals (903,900 acres), compared to Alternatives N, A, or C or the Proposed RMP, thus precluding mining activities in those areas and allowing less modification to the landscape.

Salable Minerals

The types of impacts experienced as a result of salable minerals decisions would be similar to those described under Alternative N. However, under Alternative D, more lands would be closed to disposal of salable minerals or open to salable mineral disposal with restrictions (1,160,500 acres would be closed to disposal of mineral materials; 290,200 acres would be open with restrictions to reduce ground disturbance; and 903,900 acres would be withdrawn from mineral entry). Closing or withdrawing areas from mineral operations would prevent impacts to scenery.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Impacts would be the same as those described under Alternative C.

Areas of Critical Environmental Concern

Impacts would be similar to those described under Alternative C, except that under Alternative D, additional restrictions would be applied to non-WSA lands with wilderness characteristic areas that are within ACECs. These restrictions could include designating Class A scenery as VRM Class I, not allowing fences or surface-disturbing activities, closing these areas to leasing, closing the areas to OHV use, or recommending the areas for withdrawal from mineral entry. All these actions would preclude surface-disturbing activities in those areas, thus allowing minimal modification to the landscape.

4.3.8 Special Status Species

This analysis focuses on impacts to SSS as a result of management actions that affect species or their populations and changes to the condition of their habitats. SSS include federally listed species, federal proposed and candidate species, and BLM sensitive species. Although some data on known locations and habitats within the RFO are available, the data are neither complete nor comprehensive of all SSS known to occur or potential habitat that might exist. Known and potential SSS and habitat locations were considered in the analysis; however, the potential for species to occur outside these areas was also considered and, as a result, some impacts are discussed in more general terms. Impacts to other fish and wildlife species and their habitats are addressed in Fish and Wildlife.

To preserve SSS, various laws, regulations, and policies require that SSS be considered in any agency decision that could affect threatened and endangered and sensitive species. Consideration usually includes inventory, evaluation, and mitigation of effects. Addressing effects to these species includes either project relocation or redesign (avoidance) or site-specific mitigation.

Although information on locations of all SSS sites in the RFO is incomplete, the analysis considers the management alternatives and their potential to directly or indirectly affect SSS resources, as noted previously. The number of species that could be affected by various actions is directly correlated with the degree, nature, and quantity of surface-disturbing activities in the RFO. Impacts are quantified when possible. In the absence of quantitative data, best professional judgment was used. Some of the decisions in this document are programmatic; others (e.g., route designation, oil and gas leasing categories) may be implemented immediately. To ensure preservation of specific species, further analyses will be required at the implementation level, following site-specific species inventories.

Impacts that other management programs in the planning area could cause to SSS include loss or alteration of native habitats, increased invasion of noxious weeds and other exotic weed species, decreased water availability, increased habitat fragmentation, changes in habitat and species composition, disruption of species behavior (leading to reduced reproductive fitness or increased susceptibility to predation), and direct mortality of individuals. Surface-disturbing actions that alter vegetation characteristics (e.g. structure, composition, or production) have the potential to affect habitat suitability for special status plants or animals, particularly when the disturbance removes or reduces cover or food resources. Even minor changes to vegetation communities have the potential to affect SSS.

Direct impacts from management activities to SSS may result in mortality or displacement of individuals, disturbance caused by reduced air or water quality, and alteration of immediate environments through loss of or changes to key habitat components. Beneficial or adverse effects are possible. Key habitat components include food availability or quality, cover from predators, thermal refugia, nesting/roosting/denning habitat, water availability and quality, and travel corridors. Direct impacts may affect individuals, populations, or habitats for the duration of the action, for a few days thereafter, or for several growing seasons, or may continue indefinitely if the action results in permanent habitat loss.

Indirect impacts from management activities to SSS typically result from influences of post-disturbance succession, recovery, or rehabilitation of the habitat. Beneficial or adverse effects are possible. These impacts may be long term, depending on the severity of the habitat alteration, and may change species assemblages (relative abundances or species composition), species behaviors, or overall population trends, benefiting some species and adversely affecting others.

Methods and Assumptions

To analyze the potential effects of the alternatives on SSS, information was gathered from existing inventories, recovery plans, conservation agreements, Utah Natural Heritage Program database, relevant scientific literature, computer habitat models, and other sources identifying the potential distribution of these species in and adjacent to the planning area. The analysis is also based on professional expertise of BLM specialists at the RFO, Utah State Office, knowledge of the area, and a review of the relevant scientific literature.

To comply with Section 7 of the Endangered Species Act (ESA), a Biological Assessment (BA) will be prepared to address impacts and mitigating measures on threatened, endangered, and candidate species, as well as designated critical habitat. In determining impacts for this Proposed RMP, BLM staff considered how the action would affect listed or candidate species known or suspected to occur in an area. Impacts were measured against information about threats found in the *Federal Register* (FR) notice describing the listing of the species and the potential for the action to modify designated or proposed critical habitat. Direct and indirect impacts were considered together with impacts of activities that are interrelated or interdependent. Impacts were quantified when possible. In absence of quantitative data, best professional judgment was used. In the following discussion, impacts are sometimes described by using ranges of potential impacts or in qualitative terms, if appropriate.

This analysis was based on the following assumptions:

- SSS habitat would be managed for the benefit of those species as a priority over other resource allocations and uses.
- Ground-disturbing activities could lead to modification of habitat or loss or gain of individuals, depending on the amount of area disturbed, the species affected, and the location of the disturbance.
- All surface-disturbing activities would include mitigation to reduce impacts to SSS and their habitat. Conservation measures developed for each listed or proposed species (Appendix 14) would be applied to any proposed project within the habitat of that species. Analysis of impacts and determinations of effects would include any and all mitigation and conservation measures.
- Prior to any surface-disturbing activity, an SSS review would occur to determine whether any such species would be present in the project area.
- United States Fish and Wildlife Service (USFWS) would be consulted for any actions that could have a potential to affect federally listed species.

Environmental Consequences

Impacts to SSS would likely result from actions proposed under the following resource management programs:

- Soil Resources
- Water Resources
- Vegetation
- Cultural Resources
- Paleontological Resources
- Visual Resources
- Special Status Species
- Fish and Wildlife
- Wild Horses and Burros

- Fire and Fuels Management
- Non-WSA Lands with Wilderness Characteristics
- Forestry and Woodland Products
- Livestock Grazing
- Recreation
- Travel Management
- Lands and Realty
- Minerals and Energy
- Special Designations

Other programs were determined to have little or no impact on SSS.

Alternative N: No Action

Impacts from Soil Resources

Activities conducted under the soil management program are limited to monitoring, implementing support activities, providing information for other BLM programs, and recommending appropriate mitigation. Typical activities implemented under the soil resource program would include mapping soils, maintaining soil databases, identifying timing stipulations, and recommending protective measures for critical soils. For example, implementation of timing stipulations would reduce surface disturbance in areas that have a high seasonal erosion potential. As a result, SSS would benefit from a decrease in erosion and sedimentation, thereby generally maintaining or improving habitat.

Many special status plant species such as Last Chance townsendia (*Townsendia aprica*) and Wright fishhook cactus (*Sclerocactus wrightiae*) are located in drainages or runoff areas within the Mancos Shale formation. The soils in these areas are naturally erosive and have a high salt content. Increased erosion and sedimentation has been shown to cause the direct mortality of both plant species (personal observation, Megan Robinson). The management of soil would help reduce the amount of erosion and sedimentation within SSS habitat.

Impacts from Water Resources

Implementation of water quality- and quantity-related actions would guide or advise other program actions and activities in a manner conducive to maintaining or improving surface water quality. This implementation would be consistent with existing and anticipated uses and applicable state and federal water quality standards. Beneficial impacts to SSS include improved habitat for fish and wildlife and their associated prey. Maintaining or improving habitat associated with aquatic systems would provide long-term benefits for bald eagle (*Haliaeetus leucocephalus*), Southwestern willow flycatcher (*Empidonax traillii extimus*), Northern goshawk (*Accipiter gentilis*), and Western yellow-billed cuckoo (*Coccyzus americanus*) habitat and populations. No management actions under any of the alternatives would adversely affect the federally listed Colorado River fish or their habitat in the planning area or in downstream reaches. Long-term reductions in water quality, water quantity, flow, or changes in water temperatures are not anticipated.

Impacts from Vegetation

Management Activities in Riparian and Wetland Areas

The purpose of the riparian and wetland management program is to maintain, restore, or improve riparian habitats. Proposed management actions that would be implemented to protect riparian areas include restrictions on time, space, and placement, as well as the establishment of 500-foot buffer zones around riparian areas. No surface-disturbing activities would be allowed around the outer edge of springs unless

it could be shown that there would be no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This restriction would protect any SSS and habitat within the buffer zone from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian-area restoration and vegetation treatment.

Vegetation treatments and streambank stabilization projects would potentially result in short-term adverse impacts to SSS whose habitat is located primarily in riparian and wetland areas (e.g., Southwestern willow flycatcher, bald eagle, yellow-billed cuckoo). Streambank stabilization and habitat restoration projects could result in the removal of riparian vegetation in these areas. Many of these areas are potential habitat for riparian obligate SSS. Impacts to SSS from these activities could include temporary disturbance or loss of occupied or potential habitat from heavy equipment use, increased human presence, and associated noise. Vegetation treatments in riparian areas could include the use of herbicides, fire, or mechanical removal of exotic plant species such as tamarisk or Russian olive. Application of herbicides has a remote potential for accidental drift into SSS habitat.

In the long-term, vegetation treatments and streambank recontouring would likely benefit riparian obligate SSS by improving or enhancing riparian habitat. Additionally, beneficial impacts to upland SSS could result from maintaining or improving natural hydrologic watershed processes. Activities to maintain or improve riparian health would have beneficial impacts on riparian-obligate SSS. Such activities could include construction of livestock, wildlife, and recreation exclosures within riparian habitats or habitat rehabilitation projects.

As stated, management of riparian and wetland areas would include the avoidance of surface-disturbing activities within 500 feet of riparian areas. This restriction would likely benefit riparian-obligate SSS. For example:

1. The Southwestern willow flycatcher, bald eagle, and yellow-billed cuckoo are riparian obligate species. Any restrictions on surface disturbance in the riparian habitat of these species would reduce adverse impacts. Southwestern willow flycatchers and yellow-billed cuckoos have both been known to nest in exotic riparian plant species such as tamarisk and Russian olive. The restriction of riparian projects such as mechanical removal of exotic species could protect nesting Southwestern willow flycatchers or yellow-billed cuckoos from nest abandonment and destruction.

2. Restrictions and buffers zones would reduce human activity within Southwestern willow flycatcher, bald eagle, and yellow-billed cuckoo habitat. Human activity and noise in areas occupied by Southwestern willow flycatchers, bald eagles, and yellow-billed cuckoos could alter nesting or foraging behavior. Reducing or eliminating human interaction by implementing restrictions and buffer zones would reduce the likelihood of altering these behaviors and could help increase nesting success rates. Federally listed Colorado River fish species located downstream from the planning area would not be adversely affected by any actions related to riparian and wetland management. The restrictions and buffer zones would maintain or improve the current character of the major streams, such as the Dirty Devil River, that flow into listed Colorado River fish habitat.

All riparian areas would be managed in accordance with BLM Utah riparian policy. It is the objective of this riparian policy to improve or maintain riparian areas in proper functioning condition. Riparian areas are classified as in “proper functioning condition” when there is adequate vegetation and landform structure present to dissipate stream energy from high flows. This condition reduces erosion, improves water quality, filtrates sediment, captures bedload, and aids floodplain development. Properly functioning riparian areas also result in an improvement in flood water retention and groundwater recharge,

development of root masses that stabilize streambanks against cutting action, development of diverse ponding and channel characteristics necessary for fish production and other uses, and greater biodiversity support. Continuing to implement this policy would minimize impacts on SSS inhabiting riparian and wetland areas.

Riparian and Wetland Inventories

Inventories within riparian and wetland areas would result in a better understanding of the extent of SSS and their habitats. This information would assist in the management of these areas. For example, inventory and monitoring activities could lead to habitat improvement actions such as construction of livestock, wildlife, and recreation exclosures within riparian habitats, or habitat rehabilitation projects. Wetland-obligate SSS are likely to benefit in the long term from maintained or improved riparian habitats.

Adverse short-term impacts that could result from riparian and wetland inventories could include the trampling of SSS plants and associated habitats, and increased human activity within special status wildlife species habitat.

Human presence and noise associated with exclosure development and maintenance within special status bird species habitat (such as habitat of the Southwestern willow flycatcher, bald eagle, and yellow-billed cuckoo) could disturb foraging behavior and cause nests to be abandoned, if the action inadvertently occurred during the species' nesting season.

Overall Vegetation Management

Vegetation management activities include fencing, weed treatment, timber harvest, sagebrush management (spraying, mechanical treatment, or burning), and seeding of disturbed areas or weed-treated areas. Vegetation management activities, especially those that use heavy equipment, would result in short-term adverse impacts to special status plant species and their habitat. Surface-disturbing activities could result in the crushing and mortality of individual plants and alteration of their habitat because of soil erosion or sedimentation.

Potential short-term impacts to Utah prairie dogs (*Cynomys parvidens*) include direct mortality of individuals from accidental chemical treatment drift, increased human presence, and damage to burrows. Heavy equipment used for reseeding or mechanical removal of undesirable vegetation could inadvertently damage burrows. Increased human presence could alter Utah prairie dog behavior, reducing the amount of time available for the species to forage, and could cause unnecessary energy expenditures in fleeing and alerting behavior. The presence of biologists during these activities would reduce the potential for burrow disturbance by monitoring and overseeing treatment operations. The removal of sagebrush from around prairie dog colonies would benefit the prairie dogs by allowing for growth of herbaceous vegetation used for foraging and by removing predator cover.

Human disturbance and noise associated with the use of heavy equipment could temporarily disperse special status bird species from occupied habitats. Adverse impacts to special status bird species could also result from accidental chemical drift from pesticide use in nearby areas, which could poison individuals or result in mortality of prey species. Prescribed burning could also disturb nesting special status bird species. These impacts would be expected to be localized and short term.

In the long term, SSS would benefit from most vegetation treatments because of an increase in vegetation productivity, which would provide additional forage, cover, and prey base.

Vegetation Treatments

Vegetation treatment methods include mechanical, prescribed fire, and chemical treatments. Surface disturbing activities, such as the use of heavy equipment, could cause crushing and mortality of individual plants and could alter habitat. The use of herbicides or pesticides in occupied habitat could render the habitat unsuitable for use by some species. Chemical weed controls could also affect potential pollinators of special status plant species, by eliminating their habitat.

Using heavy equipment to remove vegetation could temporarily reduce potential breeding and nesting habitats. Human disturbance and noise associated with the use of heavy equipment could also temporarily displace special status bird species from foraging and nesting habitats. For example, the Southwestern willow flycatcher and the yellow-billed cuckoo have been known to nest in tamarisk and Russian olive. Vegetation treatments to remove these invasive plant species could result in habitat loss and could disrupt nesting and foraging behavior.

The use of pesticides could result in a short-term reduction in herbivorous insects, which could cause changes to surrounding vegetation. If insect populations were substantially reduced over a long period, insectivorous SSS could disperse from currently occupied areas in an effort to find a larger forage base.

Chemical treatments and prescribed burning could also disturb nesting special status bird species because of smoke or chemical spray inadvertently drifting into occupied habitat. These activities have the potential to remove suitable habitat or other desirable vegetation.

In the long term, SSS would benefit from most vegetation treatments through an increase in vegetation productivity, which would provide additional forage, cover, and prey base.

Management of Noxious Weeds and Invasive Species

Noxious and invasive weed management activities include herbicide use, biological controls, and mechanical treatments in weed infested areas. Actions conducted in areas near SSS habitat could benefit these species by removing species that would compete with native species for available space and resources. When a specific project has been selected in SSS habitat, the necessary Section 7 consultation with USFWS would occur. Adverse impacts could result from mechanical vegetation treatments requiring the use of heavy equipment, resulting in the crushing and mortality of individual special status plant and animal species, as previously discussed. Short-term habitat and forage loss for some SSS could also result. Adverse direct impacts could result from accidental chemical drift caused by herbicide use in nearby areas.

Insect Pest Management

SSS could benefit from treatments that target destructive insects such as grasshoppers, cutworms, and Mormon crickets. Actions taken to remove destructive insects would reduce potential competition for available forage. However, many special status plant species' pollination vectors are not clearly understood. The elimination of potential pollinators could contribute to low fruit and seed set within the plant populations.

Control of insects in localized areas would likely result in adverse impacts to SSS in those areas. The reduction of some specific insect populations within special status bird habitats could alter foraging and nesting behavior by reducing the prey base and by requiring the birds to travel further to forage. For example, grasshoppers are a food source for Southwestern willow flycatcher, burrowing owl, yellow-billed cuckoo, and Greater sage-grouse. The short-term reduction in herbivorous insects could also result in changes to surrounding vegetation. If insect populations were substantially reduced over a long period,

special status bird species could disperse from currently occupied areas in an effort to find a larger forage base.

Adverse impacts could also result from accidental chemical drift of pesticides used in nearby areas. Ingestion of pesticides could lead to direct mortality of individual Utah prairie dogs or could cause decreased pup survival. However, continued dusting to control plague would help stabilize prairie dog populations and reduce the potential for catastrophic loss in individual colonies.

Impacts from Cultural Resources

Cultural resource actions could occur within occupied or potential habitat of SSS. Such actions could include developing interpretive sites, identifying cultural resources, using hand and power tools, establishing temporary camping areas, building fences, and stabilizing deteriorating buildings. Human activities in special status bird species habitats could disrupt nesting and foraging behaviors and cause the species to leave the area or abandon nests. Interpretive sites placed near nests or within home ranges of bird pairs could disturb nesting behavior on a long-term basis. This activity could lead to individual nest failure and reduced reproductive success.

The development of interpretive sites located within SSS habitat could also increase human activity in an area, resulting in the crushing and trampling of individual plants and habitat degradation over the long term. Cultural resource program actions involving excavation efforts could cause localized population declines because of crushing and destruction of individual plants, increased sedimentation, and soil compaction.

If a cultural resource project is conducted within SSS habitat, the described actions could adversely affect special status animal species, such as Utah prairie dogs and Greater sage-grouse, through the trampling of burrows and habitat degradation. These actions could result in surface disturbance, increased human presence, and noise that would disturb or displace special status animal species. Additionally, excavation activities within occupied habitat could cause direct mortality to the species. Human activities could disrupt foraging behaviors and could cause species to abandon habitat. Interpretive sites located within or near occupied habitat could disturb species' natural behavior on a long-term basis because of increased human presence.

The identification of new areas for field inventories could adversely impact SSS, depending on the intensity of the survey. If field inventories were to include SSS habitat, adverse impacts could be expected. Special status plant species populations and habitat could be trampled by surveyors searching for cultural artifacts and sites to survey. Human activities in special status bird species habitats could disrupt nesting and foraging behaviors and could result in the species leaving the area or abandoning nests. Ground-dwelling species such as the Utah prairie dog and Greater sage-grouse could experience trampling of burrows and habitat degradation within the survey areas. These actions also could result in increased erosion, noise, and visual stimulants for the species. Human activities could disrupt foraging behaviors and could result in the abandonment of the areas. Implementation of Alternative N would not directly affect SSS because no priority areas for new field inventories would be identified within the RFO.

Impacts from Paleontological Resources

Paleontological resource actions could include developing interpretive sites, identifying paleontological sites, using hand and power tools, establishing temporary camping areas, and building fences. These developments could occur within occupied or potential habitat of SSS. Actions including the development of interpretive sites, identification of paleontological resources, and the use of hand and power tools for excavation activities would increase noise and visual stimulants. These actions could temporarily disturb or displace birds. In addition, nests or key habitat components could be damaged or destroyed by the

removal of vegetation through actual digging activity or by the fencing of paleontological sites. Temporary camping areas could be established in habitats used by special status bird species. Human activities associated with paleontological activities in bird habitats could disrupt nesting and foraging behaviors and could result in the species leaving the area or abandoning nests.

If conducted within special status plant species habitat, paleontological resource activities could cause localized population declines. The necessity to conduct excavations and related activities within SSS plant habitat is expected to be rare.

Based on existing information, there would be little overlap between paleontological resources and Utah prairie dog habitats. However, should an excavation be required in prairie dog habitat, the dogs would be displaced from the disturbed areas. The use of heavy equipment within occupied habitat could destroy occupied burrows. Human activities in viable habitats could disrupt foraging behaviors and could result in the species abandoning occupied habitat. Increased human activity at interpretive sites within or near occupied habitat could disturb the prairie dog's natural behavior.

Impacts from Visual Resources

In general, VRM class designations would limit or allow surface-disturbing activities in certain areas, thereby affecting SSS. VRM Classes I and II, which preserve or retain the existing character of the landscape, would protect SSS by restricting ground-disturbing activities. VRM Classes III and IV would provide less protection by allowing more changes to the landscape and by being less restrictive of ground-disturbing activities. Under Alternative N, none of the lands managed by the RFO would be classified as VRM Class I; 529,500 acres (25%) would be managed as VRM Class II; 569,000 acres (27%) would be managed as VRM Class III; and 1,029,500 acres (48%) would be managed as VRM Class IV. Managing areas as VRM Class II would reduce surface disturbance and retain existing vegetation, thereby protecting SSS. Areas managed as VRM Class III or IV (75% of the RFO under this alternative) would be subject to actions that allow for greater landscape modification and therefore greater surface disturbance. These areas could be subject to such actions as complete vegetation removal, which would drastically alter (at least in the short term) the habitat for SSS.

Impacts from Special Status Species

Implementation of the SSS program is designed to manage threatened, endangered, candidate, and sensitive species and their habitat. Activities could include conducting surveys, implementing habitat-improvement projects, and closing areas that contain populations or suitable habitat for SSS to OHV use or other surface-disturbing activities. Other actions would include inventory, monitoring, and population dynamics studies. BLM would continue to participate in the development of Recovery Plans and Conservation Agreements. Management activities conducted under the program that would benefit SSS include the provision of guidance, monitoring, and conservation measures.

Impacts from Fish and Wildlife

The primary threat to SSS as a result of implementing actions that are associated with the wildlife management program would be habitat manipulation that could cause surface disturbances in potential or occupied habitat. Habitat manipulations such as prescribed burns, and chemical or biological controls are typically used to improve habitat for wildlife. The continued maintenance or improvement of wildlife habitats in the vicinity of listed SSS could hold some long-term benefits for the species. However, there could be short-term adverse impacts such as loss or fragmentation of habitat, loss of individuals because of redistribution of grazing herbivores, or temporary sedimentation or changes in natural water regimes because of hydrologic changes. An increase in sedimentation could be particularly harmful to plant species that are located in drainages or wetland areas. However, these potential impacts would be

localized and would not affect endangered Colorado River fish habitat downstream from the planning area.

Restrictions or stipulations of surface-disturbing activities within wildlife habitats that overlap with SSS habitat could benefit SSS within the restricted areas. The restrictions would reduce adverse effects incurred by surface disturbances that could harm SSS. Under Alternative N, areas in which current surface-disturbance restrictions are in place (such as WSAs and eligible WSR corridors) could benefit SSS within these areas. In areas in which there are no surface-disturbance restrictions, impacts (such as decreased air quality, erosion, soil compaction, introduction of exotic and noxious weeds, crushing of plants, and habitat modification) could cause incidental take of the species.

SSS such as the Mexican spotted owl, bald eagle, and Cronquist wild buckwheat (*Eriogonum corymbosum* var. *cronquistii*) are known to exist within the Henry Mountains area. Alternative N would restrict oil and gas exploration and leasing activities in crucial bison habitats and in crucial and high-value mule deer habitats during the winter and spring, minimizing disturbance to these SSS. Soils are often wet during the winter and spring, so lack of activity would minimize the potential for soil compaction and would reduce detrimental impacts to wild buckwheat. Restricting activities in winter and spring would also reduce disturbance to wintering bald eagles and breeding Mexican spotted owls.

Implementation of this alternative would provide no seasonal or spatial restrictions on surface-disturbing activities in desert bighorn habitat but would require compliance with the *Desert Bighorn Sheep Management Plan* which includes the following goals: 1) Establish optimum populations of bighorn sheep in all suitable habitat within the state, 2) provide good quality habitat for healthy populations of bighorn sheep, and 3) provide high quality opportunities for hunting and viewing of bighorn sheep. However, this management plan lacks specific direction on actions to protect bighorn sheep and their habitat from surface-disturbing activities (such as oil and gas development), so potential adverse impacts could be substantial.

Impacts from Wild Horses and Burros

Alternative N would allocate 100 AUMs for wild burros in the Canyonlands HMA. This HMA is located near Mexican spotted owl designated critical habitat. Therefore, authorized wild burro activities could impact occupied Mexican spotted owl habitat during the life of the Proposed RMP. The presence of wild burros and subsequent gathering-related actions could adversely affect the Mexican spotted owl through noise, construction of temporary gathering structures, and the trampling of habitat used by the owl. Herd gathers generally would be conducted after July 1, minimizing harmful effects to nesting spotted owls. Herd gathering would be conducted using hazing techniques of low flying helicopters, vehicles, and gathering pens. Wild burros could run through occupied spotted owl habitat. These activities could disrupt owl foraging behaviors.

Impacts from Fire and Fuels Management

The focus of this analysis is on fire management activities including wildfire suppression, prescribed fire, and non-fire fuel treatments, and not on the impacts of wildfire itself. Actions associated with fire management could adversely affect SSS and their habitat.

Increased human activity and noise associated with wildland fire suppression and prescribed fire in areas occupied by special status bird species would affect nesting, foraging, or roosting behavior. Foraging, nesting, and communal winter roosting habitats could be lost because of the use of heavy equipment, hand tools, and noise associated with intensive human activity. Some snags used for perching, roosting, or nesting could be lost because of suppression operations. However, these snags could be replaced as new snags result from fire mortality. The effects from wildland fire suppression could potentially become long term, depending upon the severity and extent of the activities conducted during a particular fire

suppression operation. A large fire that would require extensive suppression operations, such as extensive staging areas and fire-line construction, could result in long-term adverse effects to special status bird species and their habitats. However, smaller fires that would require less-extensive suppression operations would generally avoid these long-term, adverse effects.

Fire suppression activities could adversely affect special status animal species such as the Utah prairie dog and Greater sage-grouse and could cause immediate post-fire alteration or damage of occupied or suitable habitats. Suppression operations could result in harassment, displacement, injury, or mortality during staging, fire line construction, backburning, noise, or other human-caused disturbance. Any direct adverse effects would generally be short term, ending when or shortly after suppression actions were concluded. However, surface-disturbing operations conducted during fire suppression would result in a reduction or loss in quantity and quality of cover and forage habitat in both the grassland and sagebrush habitats. These activities would reduce forage availability, damage or destroy burrows or colonies, and remove the sagebrush and shrubs that provide above-ground vegetation cover. Despite the immediate initial loss of forage and shrub cover, some suppression tactics (e.g., backburning operations), or emergency restoration actions would stimulate vigorous regrowth of forb species in the following growing seasons. This regrowth would benefit SSS through improved forage quality and quantity.

A large fire event and associated suppression activities could result in the deposition of large amounts of sediment and ash into local river systems. Federally listed Colorado River fish habitat located downstream from the planning area could experience short-term water quality degradation. However, no long-term adverse impacts to the river system or the fish would be anticipated. Any fire retardant inadvertently deposited into the river system would likely dissipate and would not affect any listed fish species. Because prescribed fire-related actions tend to be limited in scope and smaller than major wildfires, no downstream adverse impacts to the listed Colorado River fish would be expected.

Fire management activities could adversely affect special status plant species by trampling individuals or habitat. Fire suppression activities also have the potential for resulting in increased erosion. The fire itself could result in the death of individual plants or the alteration of their habitat. The construction of fire lines by using hand tools and heavy machinery could also result in the destruction of individual plants and could alter habitat. Many special status plant species are found in locations in which wildfire did not historically burn. However, the presence of invasive weeds in those areas could result in fires burning where they previously did not. Therefore, the potential of a wildland fire, with attendant suppression activities, in special status plant species habitat is increasing.

Prescribed fire management activities, including fire-line construction and use of staging areas, could adversely affect listed special status plant species by trampling individual plants or altering habitat, as previously described. However, the severity of this impact would be much less than described under Appropriate Management Response because prescribed burns generally would not be proposed within special status plant species habitat.

Under Alternative N, prescribed fires would be used to reduce hazardous fuels within the RFO. As stated above, prescribed fires would have the potential to adversely affect SSS. However, habitat manipulations resulting from the use of fire would also benefit SSS over the long term by improving vegetative conditions.

Stabilization and rehabilitation efforts would benefit SSS over the long term by decreasing erosion and restoring or improving habitat conditions following a fire event, although there could be short-term adverse impacts. The planting of non-native species that could out-compete special status plant species and other native plant species used by special status wildlife species would alter habitat conditions and would make them less favorable. The use of heavy equipment within special status plant species habitat

could result in the crushing of individual plants and segmentation of populations. Increased human activity during construction efforts could cause special status bird species to alter foraging, nesting, and roosting behaviors. The use of heavy equipment associated with stabilization efforts within Utah prairie dog colonies could result in the crushing of burrows and the direct mortality of individual prairie dogs.

Alternative N includes stabilization efforts as needed for every wildland fire. Stabilization efforts have the potential to benefit SSS through decreased erosion and improved habitat and vegetative conditions. However, as described previously, surface-disturbing activities associated with stabilization also have the potential to adversely affect SSS by altering habitat, primarily on a short-term basis.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under Alternative N, resulting in no additional protection for SSS.

Impacts from Forestry and Woodland Products

Forest and Woodland Products Harvesting

Forestry and woodland management actions include the harvesting of firewood, poles, Christmas trees, pine nuts, timber, and seed collection. Commercial forestry activities (e.g., timber harvests and sales) are restricted to upland forests. These activities could include the use of heavy equipment, helicopters, chemical applications, road construction, and culvert installation, and typically would result in increased traffic, noise, and human presence.

The implementation of forestry management actions that reduce pinyon-juniper woodland invasion would benefit those SSS that require open space. The clearing of old, dense, relatively less-productive woodlands could open up more productive areas that could be used by SSS.

Potential adverse impacts to special status bird species could include loss of habitat, increased human access to remote habitats because of new road construction, increased noise, increased human activity, overspray or drift of chemical treatments, and culvert installation or waterbar construction, all of which could alter riparian function. These activities could result in habitat loss or fragmentation, displacement of individuals, reduction in special status bird species prey base, or direct mortality of individuals. Human activities associated with forestry and woodland actions could increase noise and visual stimulants in habitats. These factors could disrupt nesting and foraging behaviors, could result in the species leaving the area or abandoning nests, or could lead to individual nest failure and reduced reproductive success. A significant alteration of habitat could render suitable habitat uninhabitable for SSS.

Timber and woodland harvest activities, including the construction of timber access roads, could result in the direct and indirect loss of special status plant species and their habitat. Additionally, authorized collection of seeds within special status plant species habitat could result in loss or damage to plants. Seeds are typically gathered by thrashing the plants with tennis rackets. Motorized vehicles are used as part of the collection activity. The inadvertent or deliberate collection of special status plant species seeds would reduce recruitment within the habitat, resulting in population loss.

Surface-disturbing activities such as the use of heavy machinery and equipment could contribute to decreased air quality. Decreased air quality could adversely affect SSS if it is significant within occupied habitat.

The clearing of woodlands could open areas that could be used by the Utah prairie dog both for burrows and forage.

Most of the special status plant species located in the RFO are not located in forested areas that would be impacted by commercial timber harvesting. However, construction of roads through viable and occupied habitat of SSS to access the timber could adversely impact SSS.

Alternative N would allow timber harvest in areas west of Capitol Reef National Park. Both the Rabbit Valley gilia (*Gilia caespitosa)* and last chance townsendia (*Townsendia aprica*) are located west of Capitol Reef National Park and could be adversely affected, as described previously.

Seed and Live Plant Collection

Alternative N would allow the commercial collection of live plants and seeds. Authorized collection of seeds within special status plant species populations and habitat can damage the plants. Seeds are typically gathered by thrashing the plants with tennis rackets. The collection of special status plant species seeds would also reduce recruitment within viable habitat, by reducing the number of viable seeds within an area. However, potential impacts would be reduced because of required NEPA analysis and consultation under Section 7 of the ESA for projects involving collection of special status plant species or their seeds.

Human activities associated with seed and live-plant collection can increase noise and visual stimulants in viable habitats of special status bird species. These actions could disrupt nesting and foraging behaviors and could result in the species leaving the area or abandoning nests. The actions could also lead to individual nest failure and reduced reproductive success.

Human activities associated with seed and live-plant collections could result in the trampling of burrows for Utah prairie dog and pygmy rabbit. These activities could also alter foraging behaviors within a population during the activities' duration. The collection of seeds within SSS habitat could reduce available forage for SSS or their prey.

Impacts from Livestock Grazing

The primary threats to SSS from the implementation of the livestock grazing program are surface-disturbing actions such as the construction of fences, water pipelines, cattle guards, wells, livestock ponds, and actual grazing activities. Although the threat would be minimized through the use of inventories, clearances, and mitigation, construction activities have the potential to directly impact special status plant species through individual mortality during construction efforts (e.g., crushing of plants from vehicles or fence posts). The construction of fences or livestock ponds has the potential to indirectly affect special status plant species by leading to concentrations of cattle in occupied habitat, thus resulting in trampling of plants. Similarly, placement of salt and mineral supplements could lead to cattle concentration in special status plant species habitats and could result in trampling of individuals. Non-structural grazing projects could include seeding, plowing, and herbicide spraying. Plowing and herbicide use could result in the direct mortality of populations and viable habitat. The alteration of habitat could have an indirect adverse effect on habitat for the pollinators of special status plant species.

Human activity from authorized construction and herding efforts in viable special status bird species habitats could disrupt nesting and foraging behaviors and could result in the species leaving the area or abandoning nests. The placement of salt and mineral supplements could lead to cattle concentration in special status bird species habitats and could result in the displacement of the species. Finally, non-structural grazing projects could include seeding, grazing, and herbicide spraying. These activities could alter the habitats used by special status bird species prey, and could result in disrupted foraging behaviors.

Livestock grazing management activities (construction of fences and water ponds, herding cattle, watering, and salting) within occupied prairie dog habitat could cause the direct mortality of individuals. Increased human activity during these projects could disrupt the foraging habits of the Utah prairie dog.

Conversion of Kind of Livestock and Adjusting Season of Use and Permitted Use

Adjusting livestock season of use could benefit SSS. Many special status plant species appear to be particularly susceptible to livestock grazing-related impacts during the spring, when the plants are sprouting, flowering, and fruiting. Most of the special status bird species thrive when there is little or no disturbance during breeding and nesting periods.

Studies conducted on the effects of grazing and habitat quality on the Utah prairie dog have shown strong associations between grazing season of use and prairie dog weight gain and reproduction. Adult weight gain was three times lower in complexes that were grazed in the summer than in complexes that were grazed in the spring or fall/winter (Ritchie and Cheng 2001). The BLM permits authorizing livestock grazing contain terms and conditions that specify livestock numbers and season-of-use, to ensure that an area is properly grazed. Livestock grazing in summer appears to be the most detrimental to Utah prairie dog populations. Fall or winter grazing was shown to have a beneficial effect on prairie dogs as compared to no grazing, because grazing can prevent vegetation from visually obscuring the horizon and can aid prairie dogs in detecting predators. Spring grazing could enhance prairie dog survival, but repeated annual spring grazing is likely to accelerate shrub invasion, leading to long-term Utah prairie dog habitat degradation. Fall and winter grazing may not reduce standing plant material enough to enhance prairie dog predator detection, especially in areas dominated by crested wheatgrass (*Agropyron cristatum*).

The ability to adjust livestock numbers because of unforeseen conditions such as drought also benefits SSS. During drought conditions, competition between livestock and wildlife is high and undesirable vegetation is consumed. This could include special status plant species. Additionally, livestock within special status animal species habitat such as the Utah prairie dog are in direct competition for forage. Livestock numbers that might have a beneficial effect or no effect to Utah prairie dogs in wet years could have detrimental effects during drought conditions.

The conversion of kind of livestock use could have adverse effects on special status plant species. For example, sheep have upper incisors, so sheep can graze more closely to the ground and impact vegetation more severely than can cattle. Thus, sheep within Utah prairie dog habitat could graze more forage used by the prairie dogs for survival than would cattle. Sheep also would eat a greater variety of plant species than cattle. Therefore, the introduction of sheep in a former cattle allotment could have detrimental effects by foraging on special status plant species and habitat.

Impacts from Recreation

Any form of recreational activity that increases noise and dust could adversely impact SSS by disturbing breeding, feeding, or sheltering activities. Motorized recreation has the greatest potential to affect SSS, particularly during the time of year when species are rearing young. Animals could be injured or killed by collisions with vehicles on designated routes, and plants could be crushed by vehicles. Disturbance could lead to emigration or an increased risk of predation.

Foot traffic through sensitive areas could disturb, injure, or kill SSS or prevent successful feeding or breeding activities. Recreational shooting activities might increase noise and trash in a localized area and could lead to injury or death of animals. Camping might cause minor to moderate impacts by disturbing animals, altering or removing habitat, crushing plants, increasing trash and debris in the area, and increasing the risk of wildfire. Animals might ingest foreign food substances that could cause illness or

death. Camping activities where pets are allowed to roam freely might also cause impacts to special status wildlife. Use restrictions on these types of activities should reduce or eliminate adverse effects.

Recreationists often use riparian areas because of the presence of shade, water, aesthetic values, and opportunities for camping, fishing, boating, swimming, and other activities. Impacts to these habitats could be detrimental to riparian obligate species by altering foraging, nesting, and mating behaviors. Extended recreational use in riparian areas could also result in sedimentation and compaction of soils, which could alter viable habitat for aquatic species.

Visitor use is expected to increase throughout the RFO. Under Alternative N, the entire RFO (with the exception of Yuba Reservoir, which is managed by the Fillmore FO) is identified and managed as an ERMA. Management of recreation in ERMAs is restricted to custodial actions only, with no special prescriptions identified. OHV use in particular could lead to inadvertent damage to SSS and their habitat because of ease of access across a large portion of the RFO. Increasing recreational uses could also have adverse impacts on special status birds, particularly in riparian areas, displacing birds and degrading habitat.

Special recreation permits (SRPs) are issued to control visitor use and protect resources. Stipulations for protecting SSS, developed in consultation with USFWS, would be included in SRPs that would mitigate impacts to species and habitat, Mitigation could include actions such as limiting camping near springs or protecting raptors and nests from rock-climbing activities).

Impacts from Travel Management

Motorized activities in special status bird species habitats could disrupt nesting and foraging behaviors, resulting in the species leaving the area or abandoning nests. Frequently used OHV areas near nests or within home ranges of individual pairs could disturb nesting behavior on a long-term basis. This type of activity could also lead to individual nest failure and reduced reproductive success.

OHV use could degrade habitat, particularly meadow and shrub habitats that are vital to special status bird species prey. Noise produced by OHVs could disturb special status bird species at important nesting and roosting sites during critical periods.

OHV use in riparian habitats could result in the trampling, clearing, and cutting of vegetation; prevention of seed germination because of soil compaction; increased bank erosion and sedimentation; increased incidence of fire; introduction of exotic plant species; and noise disturbance. These impacts could result in adverse effects for SSS such as the Southwestern willow flycatcher, bald eagle, and yellow-billed cuckoo. Adverse effects could result from reduction of available foraging, roosting, breeding, and stopover habitats. OHV disturbance could increase the potential for nest abandonment or mortality of young and eggs.

Impacts of OHV use on special status plant species could involve habitat disturbance and increased access for illegal collectors. OHV use within SSS habitats could lead to direct mortality of the species (through the crushing of plants) and indirect mortality (through increases in erosion and sedimentation). For example, monitoring has shown that OHV use has had an adverse impact on special status plant species population in the Factory Butte area. The increasing use of OHVs on BLM land could also transport noxious and invasive weed seeds from infested areas to uninfested areas. Surface disturbance (e.g., crushing of vegetation, soil disturbance) associated with OHV use could increase native plant communities' susceptibility to weed establishment and could modify localized soil conditions until they are unsuitable for establishment by native species.

OHV use could result in adverse impacts to Utah prairie dogs; such impacts include damage to burrows, loss of forage, harassment, noise, and direct mortality. If OHV use occurs in occupied Utah prairie dog colonies, ground disturbances associated with these activities could cause burrows to collapse, thereby impacting Utah prairie dog colony structure and function. In addition, OHV use could destroy vegetation within and near Utah prairie dog colonies, thereby degrading potential foraging habitats. Increased human activity near prairie dog towns could alter typical activity patterns, leading to decreased nutritional health. OHV use could increase interactions between Utah prairie dogs and humans; if these interactions involve hunters, the potential for mortality of prairie dogs could also increase.

Restrictions on OHV use within SSS habitat would benefit the species by limiting disturbance. Under Alternative N, 1,636,400 acres would continue to be open to cross-country OHV use. This area includes some habitat for and populations of all the SSS located within the RFO. As stated previously, continued OHV use would result in adverse impacts to SSS. It is anticipated that OHV use would continue to increase in the future. As a result, adverse impacts to SSS in the RFO would also increase.

Under Alternative N, there would be 4,315 miles of open routes and 65 miles of closed routes. Alternative N does not take SSS into account when considering OHV route designations; the designations are based on the location of existing routes. Therefore, SSS could be adversely impacted by OHV route designation under this alternative.

Impacts from Lands and Realty

Land Tenure Adjustments

The effects of land tenure adjustments on SSS would be determined through site-specific environmental analysis for any proposed land disposals. Generally, lands containing listed plant and animal species habitat would not be considered for disposal. BLM could acquire lands that contain SSS habitat. Doing so would benefit SSS by providing protections that would not be afforded by non-federal ownership.

Withdrawals

Implementation of Alternative N would include recommending the four existing ACECs for mineral withdrawal, in addition to the existing withdrawals. Withdrawing these areas from mineral entry would reduce any adverse effects to SSS that could result from mineral development in these areas.

Rights-of-Way and Other Land Use Authorizations

ROWs or other land use authorizations (e.g., permits, leases, easements) could be proposed in populations and habitats for SSS. Construction of ROWs in SSS habitats could cause direct impacts to the habitat through trampling and other surface disturbance. Indirect impacts could include changes in hydrology or degradation of habitat because of increased sedimentation or habitat fragmentation. ROWs within viable or occupied SSS habitat could also degrade habitat through the introduction of invasive weeds.

Surface disturbances associated with ROWs and other land use authorizations could cause habitat loss or changes in vegetation structure, which could alter special status bird species' breeding and migratory habitats at or near disturbance locations. In addition, the construction, operation, and maintenance of ROWs could increase noise and human presence in otherwise remote areas and could increase stress levels of special status bird species. Increased human presence could disturb foraging and nesting behavior of special status bird species prey. The disturbance of individuals could result in reduced productivity or nesting success and increased likelihood of individual mortality.

If ROWs were authorized and developed in or near known populations of listed plant species, the habitat could be degraded, resulting in plant mortality.

Activities associated with ROW development (e.g., blading and grading of vegetation for construction of ROWs) could produce open areas that create ideal habitat for Utah prairie dogs. Blading and grading of habitat could also be beneficial to prairie dogs, by decreasing the vegetation height and therefore increasing visibility around existing colonies. When these disturbed areas are successfully reclaimed, the regrowth of native vegetation provides ideal forage for the prairie dog.

Construction and operation of roadway systems increase both traffic and visitation to otherwise remote areas. Increases in traffic and human presence could lead to increased mortality of special status animal species such as the Utah prairie dog, because of vehicle collisions and potential poaching (Laun 1957; Johnson and Collinge 2004).

ROW construction activities have the potential to result in short-term impacts to the Utah prairie dog, including damage to burrows, temporary displacement, loss of forage, and direct mortality. Potential long-term impacts include loss of habitat and disturbance from increased human presence, noise, and increased vehicular traffic on roadways. Direct habitat loss, including the conversion of habitat to agriculture, urban sprawl, and roadway development, have all been cited as reasons for population declines in prairie dogs (Smith 1955; Wuerthner 1997; National Wildlife Federation 2000; National Wildlife Federation and Environmental Defense 2002). Any direct habitat loss caused by ROW development in existing habitat (e.g., established prairie dog towns) or potential habitat (e.g., short grass prairie; low growing shrub lands) could adversely impact the Utah prairie dog.

Any new land use authorizations (e.g., ROWs, permits, leases, easements) would require consultation with USFWS and NEPA review, to minimize impacts to SSS. Under Alternative N, all ACECs (14,780 acres), eligible WSR corridors (12 segments—135 miles), areas closed to leasing (459,700 acres), and areas open to leasing subject to major constraints (NSO) (22,600 acres) would be managed as ROW avoidance areas. Exceptions would be granted only when the proposed authorization would not create substantial surface disturbance or would create only temporary impacts. Thus, impacts to SSS in these avoidance areas would be negligible.

Wind and Solar Energy

According to the U.S. Department of Energy, National Renewable Energy Laboratory, the planning area has a low potential for wind and solar energy. Wind energy developments could potentially impact several special status plant and animal species. According to the *Final Programmatic Environmental Impact Statement on Wind Energy Development* (BLM 2005c), impacts to threatened and endangered species would include habitat disturbance, introduction of invasive weeds, individual mortality, erosion and runoff, fugitive dust, noise, exposure to contaminants, and interference with behavioral activities. That EIS notes that the operational impacts of most concern to ecological resources would be those associated with bird and bat strikes with turbines and associated infrastructure (e.g., transmission lines and meteorological towers) and to a lesser extent, electrocution of birds. Other concerns include habitat fragmentation, noise, and disturbance from human and vehicle activity.

Alternative N would include solar and wind energy exploration and development on a case-by-case basis. Any impacts to SSS would depend upon the type of project proposed. For example, the use of solar panels within a special status plant species population could block sunlight from the plants; or the use of wind turbines could result in collisions with special status bird species.

Impacts from Minerals and Energy

Construction and operation of facilities associated with mineral exploration could expand current roadway systems and increase both traffic and visitation to otherwise remote areas. Increased traffic could result in increased mortality of SSS from vehicle collisions, poaching, and trampling of habitat. In addition to

direct human-caused mortality, SSS could also be affected through exposure to spills or other sources of petroleum products.

Impacts from mineral development activities could include disturbances related to construction activities, noise from vehicles and equipment, seismic activities, increased human presence, and other related operations. Increased vehicle traffic could disturb special status bird species' nesting and roosting sites. Mineral and energy development typically disturb or remove vegetation and soil. When these activities are within special status bird species foraging habitat, the species can be adversely affected through a loss or decrease in food base. Exploration and production activities could result in increased human presence, increased noise levels, habitat fragmentation, and displacement of individuals.

Potential impacts of energy and mineral development to special status plant species include direct mortality caused by construction equipment and vehicles in occupied habitats. Also, habitat could be lost or modified by constructing well pads, pipelines, and associated facilities in occupied and suitable habitats or by disturbing habitat of the species' pollinators. Alternative N would protect Greater sage-grouse habitat by prohibiting surface disturbing activities near leks from March 1 through July 15, and within nesting/brooding habitat from April 1 through June 15. Other SSS that inhabit these areas would benefit from these stipulations (e.g., pygmy rabbit, Utah prairie dog).

Leasable Minerals—Oil and Gas

In December 2004, BLM and USFWS completed a programmatic consultation under Section 7 of the ESA, resulting in the development of a set of lease notices for listed species; this list is to be attached to oil and gas leases offered in the state. These lease notices, in conjunction with a threatened and endangered lease stipulation required by Instruction Memorandum (IM) WO 2002-174 and IM UT 2005-089, would alert potential lessees of the possible presence of listed species on the lease parcels. The notices would also inform potential lessees of restrictions and requirements that could be necessary at a future developmental stage. The lease notices and accompanying consultation memoranda are found in Appendix 11. These notices would apply to all the listed species found within the RFO. Application of the measures resulted in a "may affect, not likely to adversely affect" determination for the oil and gas leasing program.

Implementation of Alternative N would result in 1,236,500 acres (58% of the RFO) open to leasing subject to the standard terms and conditions; 409,200 acres (19%) open to leasing subject to moderate constraints (TL, CSU), 22,600 acres (1%) open to leasing subject to major constraints (NSO), and 459,700 acres (22%) closed to leasing. SSS that are located in areas that are open to leasing subject to the standard terms and conditions or that are open to leasing subject to moderate constraints (TL, CSU) include the Rabbit Valley gilia, Greater sage-grouse, pygmy rabbit, and other species. Fluid mineral development could adversely impact these species. Alternative N would protect Greater sage-grouse habitat by prohibiting surface disturbing activities near leks from March 1 through July 15, and within nesting/brooding habitat from April 1 through June 15. Other SSS that inhabit these areas would benefit from these stipulations (e.g., pygmy rabbit, Utah prairie dog).

Leasable Minerals—Coal

Any direct impacts of coal development on listed plant and animal species would be precluded by Coal Unsuitability Criterion 9, which states, "Federally-designated habitat for listed threatened or endangered plant and animal species or species proposed for listing…shall be considered unsuitable." Alternative N would protect Greater sage-grouse habitat by prohibiting surface disturbing activities near leks from March 1 through July 15, and within nesting/brooding habitat from April 1 through June 15. Other SSS that inhabit these areas would benefit from these stipulations (e.g., pygmy rabbit, Utah prairie dog).

Geophysical

Under Alternative N, the BLM would allow geophysical explorations outside of WSAs and existing ACECs. Geophysical exploration involves the use of OHVs and vehicles to lay geophones, to drill shot holes for charges, or to create a sound wave using all-terrain “thumper" vehicles instead of using charges. Vehicles are also used to remove the geophones and reclaim the shot holes (if used). Exploration for oil and gas (including coalbed natural gas) may also include the drilling of one or more wells to test for the reservoir and its productive viability. During the exploration phase of drilling, surface-disturbing activities include the construction of roads, well pads, reserve pits, and other facilities. Adverse impacts to SSS, which were described previously under Impacts from Minerals and Energy, might result from surface-disturbing geophysical activities. Alternative N would protect Greater sage-grouse habitat by prohibiting surface disturbing activities near leks from March 1 through July 15, and within nesting/brooding habitat from April 1 through June 15. Other SSS that inhabit these areas would benefit from these stipulations (e.g., pygmy rabbit, Utah prairie dog).

Locatable Minerals

SSS could be adversely affected (as described previously) by the surface-disturbing activities that would result from locatable minerals development. Under Alternative N, 169,480 acres would continue to be withdrawn from mineral entry. Closing or withdrawing areas from mineral operations would prevent these types of activities from causing impacts to SSS. Alternative N would protect Greater sage-grouse habitat by prohibiting surface disturbing activities near leks from March 1 through July 15, and within nesting/brooding habitat from April 1 through June 15. Other SSS that inhabit these areas would benefit from these stipulations (e.g., pygmy rabbit, Utah prairie dog).

Salable Minerals

Alternative N allows the sale of mineral materials (salable minerals) on 1,668,300 acres (78% of the RFO). Existing areas of salable mineral disposals have already been substantially impacted—it is likely that SSS do not occur in these areas. However, new sites would be subject to NEPA review and consultation with USFWS, thereby protecting SSS including Greater sage-grouse. Alternative N would protect Greater sage- grouse habitat by prohibiting surface disturbing activities near leks from March 1 through July 15, and within nesting/brooding habitat from April 1 through June 15. Other SSS that inhabit these areas would benefit from these stipulations (e.g., pygmy rabbit, Utah prairie dog).

Impacts from Special Designations

Wilderness Study Areas

Continued management of WSAs under the IMP would limit surface-disturbing activities that could adversely affect SSS. SSS located in WSAs include the Mexican spotted owl and bald eagle. WSAs are closed to leasing, precluding any impact from oil and gas development on SSS within these areas, and are managed as VRM Class I, which further restricts surface-disturbing activities.

Wild and Scenic Rivers

Under Alternative N, the outstandingly remarkable values, tentative classification, and free-flowing nature of all eligible river segments would be protected. SSS such as the Mexican spotted owl and bald eagle could benefit from continuing these protections because no surface-disturbing activities would be allowed within the SSS habitat in these areas.

Areas of Critical Environmental Concern

Under Alternative N, BLM would continue designation and special management of the four existing ACECs: Beaver Wash, North Caineville Mesa, South Caineville Mesa, and Gilbert Badlands. Habitat for

the Wright fishhook cactus, Mexican spotted owl, and bald eagle is located within these ACECs. ACECs provide limited protection for SSS by restricting many surface-disturbing activities.

Alternative A

Impacts from Soil Resources

Impacts would be the same as those described under Alternative N.

Impacts from Water Resources

Impacts would be the same as those described under Alternative N.

Impacts from Vegetation

The types of impacts experienced as a result of riparian management would be similar to those described under Alternative N, except that the size of the buffer zone in which no surface disturbance would be allowed is 330 feet on each side of the riparian area under Alternative A (compared with 500 feet under Alternative N). Thus, Alternative A would protect a smaller area around the riparian/wetland zones from surface disturbance. However, projects to improve habitat conditions within these riparian zones (if they would benefit SSS) could still be performed, even within this buffer zone.

The types of impacts experienced as a result of vegetation management would be similar to those described under Alternative N. Under Alternative A, existing vegetation treatments would be maintained and new treatments to increase productivity and to achieve desired vegetation conditions would be implemented. Beneficial effects could result from many of these activities, which would include improved vegetation conditions. An increase in vegetation productivity could result in the introduction of native or non-native species that could directly compete with special status plant species through encroachment in occupied and potential habitat. Adverse effects could also result from the construction efforts associated with some vegetation treatments, as described previously under Alternative N.

The types of impacts experienced as a result of noxious weed and invasive species management would be similar to those described under Alternative N, except that implementation of Alternative A would likely result in additional acres being managed for invasive and noxious weed control. As a result, potential adverse short-term impacts to SSS could increase. However, potential long-term benefits would also be greater as a result of weed-control methods that would improve forage and habitat for special status animal species. SSS habitat would also be improved by the removal of invasive and noxious weeds, which compete for available space and resources.

Impacts from implementing insect pest management actions would be the same as those described under Alternative N.

Impacts from Cultural Resources

Impacts would be similar to those described under Alternative N, except that most cultural resource sites would be allocated and managed for public use under Alternative A. This allocation would emphasize public education and interpretation of cultural resources, which would increase visitation to sites. Human activities in special status bird species habitats could disrupt nesting and foraging behaviors and could result in the species leaving the area or abandoning nests. Ground dwelling species such as the Utah prairie dog and Greater sage-grouse could experience trampling of burrows and habitat degradation within the survey areas. These actions could also result in increased erosion, noise, and visual stimulants for the species. Human activities could disrupt foraging behaviors and could result in the abandonment of the areas. However, these activities would only affect relatively small, localized areas.

Alternative A identifies Horseshoe Canyon South WSA as an inventory priority area. SSS known to exist in the area include the Mexican spotted owl (*Strix occidentalis*), bald eagle (*Haliaeetus leucocephalus*), and Townsend's big-eared bat (*Corynorhinus townsendii*). Adverse impacts from inventories could result in localized habitat degradation, altered foraging behaviors, and nest abandonment.

Impacts from Paleontological Resources

Impacts would be the same as those described under Alternative N.

Impacts from Visual Resources

The types of impacts experienced under Alternative A would be similar to those described under Alternative N, except that 446,900 acres (21% of the lands managed by the RFO) would be designated as VRM Class I under Alternative A. If SSS habitat overlaps with these areas, SSS would benefit because VRM Class I areas (which require preservation of the existing landscape) would restrict surface-disturbing activities.

Under Alternative A, none of the lands managed by the RFO would be designated as VRM Class II; 392,800 acres (18%) would be designated as VRM Class III; and 1,288,300 acres (61%) would be managed as VRM Class IV. Areas designated as VRM Class III or IV (79% of the RFO under Alternative A) would be subject to actions that allow for greater landscape modification and therefore greater surface disturbance. These areas could be subject to such actions as complete vegetation removal, which would drastically alter (at least in the short term) the habitat for SSS. Alternative A designates more acres as VRM Classes III and IV than do any of the other alternatives.

Impacts from Special Status Species

Generally, impacts would be similar to those described under Alternative N. Alternative A would impose a one-quarter mile seasonal buffer (March 15 through June 1) for no surface disturbance or permanent structure around Greater sage-grouse leks, but wouldn't include restrictions on surface disturbing activities within nesting/brooding habitat. Therefore, this alternative provides less protection to sage-grouse and other SSS in these areas than Alternative N.

Impacts from Fish and Wildlife

Impacts would be similar to those described under Alternative N. However, under Alternative A mitigation could be required in deer and elk habitats from December 15 through April 15 and in crucial desert bighorn habitat from April 15 through June 15. Implementation of these restrictions and mitigation measures could benefit SSS in these areas.

Impacts from Wild Horses and Burros

Impacts would be the same as those described under Alternative N.

Impacts from Fire and Fuels Management

The types of impacts experienced under Alternative A would be similar to those described under Alternative N, except that under Alternative A, maximum treatment acreage limits would be set (averaging 73,600 annually). Prescribed fires and wildland fires have the potential to adversely affect SSS. However, habitat manipulations through the use of fire could benefit SSS over the long term by improving vegetation conditions.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs would be proposed under Alternative A, resulting in no additional protection for SSS.

Impacts from Forestry and Woodland Products

Forest and Woodland Products Harvesting

The types of impacts experienced as a result of forest and woodland products harvesting would be similar to those described under Alternative N, except that commercial and non-commercial harvesting would be allowed throughout the RFO (with the exception of WSAs) under Alternative A. Thus, impacts from this type of activity would occur over a larger area.

Seed and Live Plant Collection

The types of impacts experienced as a result of seed and live plant collecting would be similar to those described under Alternative N, except that the designation of specific areas for seed collection would be considered under Alternative A. If specific areas that exclude occupied SSS habitat were designated for seed collection, adverse effects that would result from seed and plant collection activities could be reduced. If occupied SSS habitat was considered for seed collection, NEPA analysis and Section 7 consultation would be required, reducing the potential for adverse impacts.

Impacts from Livestock Grazing

Impacts would be similar to those described under Alternative N, except that 36,950 more acres would be available for livestock grazing under Alternative A. Thus, impacts from surface-disturbing activities associated with the construction and implementation of range improvements (both structural and non-structural) could occur on additional acres. However, because this area represents a very small portion of the total RFO (less than 2%), impacts to SSS from implementation of Alternative A would be negligible.

Impacts from Recreation

The establishment of and management associated with SRMAs would provide for management at popular recreation use areas. Management of these areas would decrease the potential for inadvertent damage of SSS and their habitat, compared to Alternative N.

Under Alternative A, five SRMAs (514,500 acres) would be established to manage recreational use and to mitigate impacts caused by this use, such as uncontrolled camping, parking, and other activities. This management would decrease the potential for such impacts to SSS as trampling, erosion, destruction of viable and occupied habitat, and the direct mortality of individuals. Limiting OHV use in the Otter Creek Reservoir SRMA to designated routes would limit the extent of potential impacts.

The construction of recreation facilities in the Big Rock SRMA and the Sahara Sands SRMA would focus recreation use, minimizing impacts. Managing the Dirty Devil/Robbers Roost SRMA (290,000 acres) for primitive and semi-primitive recreation would reduce the potential for impacts to SSS by limiting OHV recreation use to designated routes. Managing the Factory Butte SRMA (199,700 acres) for a motorized recreational opportunity and allowing moderate to extensive landscape modification would have potentially major impacts and would result in continued impacts to SSS. However, this area is currently receiving heavy motorized use.

Alternative A allows vehicles to pull off of designated routes (outside WSAs) as much as 100 feet to either side of the centerline (for parking/staging) and as much as 300 feet to either side of the centerline (for camping). This allowance could result in vehicles generally impacting SSS and their habitat in these areas.

Impacts from Travel Management

The types of impacts experienced as a result of travel management would be similar to those described under Alternative N, except that implementation of Alternative A would result in 449,000 acres that are

open to cross-country OHV use. These open areas include some populations of and some habitat for the Wright fishhook cactus and San Rafael cactus, both of which are federally listed species. OHV use within SSS habitats has the potential to lead to direct mortality of the species, through the crushing of plants, and indirect mortality, through increases in erosion and sedimentation. The increasing use of OHVs on BLM land could also transport noxious and invasive weed seeds from infested areas to uninfested areas. Surface disturbance associated with OHV use (e.g., crushing of vegetation and soil disturbance) has the potential to increase the susceptibility of native plant communities to weed establishment, and can modify soil conditions so that the soils are unsuitable for establishment by native species. OHV use in special status plant species habitat could provide increased access for illegal collectors.

Areas, including those that contain SSS habitat, that are either closed to OHV use or in which use is limited to designated routes would be protected from the surface-disturbing activities associated with this activity. Alternative A, which designates no areas as closed to OHV use and 1,679,000 acres as limited, would provide more protection to SSS than Alternative N would because substantially less areas are open to cross-country OHV use under Alternative A. Alternative A also proposes to limit OHV use to designated routes in Greater sage-grouse breeding (leks) and nesting habitats.

Under Alternative A, 4,312 miles of routes would be available for public use and 68 miles would be closed. Alternative A was developed to avoid threats to soil, watershed, vegetation, and SSS, with respect to route designations. Therefore, SSS could be protected when road restrictions are placed in areas in which OHV use is deemed to be a threat to a particular species. Under Alternative A, routes that are restricted or closed are located in areas in which SSS such as the Mexican spotted owl, pygmy rabbit, and the Wright fishhook cactus exist. Limited or no access to these areas would reduce adverse effects to SSS that could result from OHV use.

Impacts from Lands and Realty

Land Tenure Adjustments

Impacts would be the same as those described under Alternative N.

Withdrawals

Implementation of Alternative A would have little or no effect on SSS. The existing withdrawals are located in picnic and camping areas that do not contain any known SSS populations or habitats.

Rights-of-Way and Other Land Use Authorizations

The types of impacts experienced as a result of land use authorizations would be similar to those described under Alternative N, except that under Alternative A, there would be fewer ROW avoidance areas. However, because consultation with USFWS and NEPA review would be required for any new ROW or other land use authorization, impacts to SSS would be negligible.

Wind and Solar Energy

Implementation of Alternative A would allow wind and solar energy exploration and development throughout the RFO except for in WSAs and VRM Class I areas. The restriction of wind and solar energy exploration and development within WSAs and VRM Class I areas could indirectly benefit SSS such as the Mexican spotted owl and the Wright fishhook cactus, by eliminating surface-disturbing activities within these areas.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Under Alternative A, 860,600 acres (40% of the RFO) would be open to leasing subject to the standard terms and conditions; 820,500 acres (39%) would be open to leasing subject to moderate constraints (TL, CSU); and 446,900 acres (21%) would be closed to leasing. SSS that are located in areas that are open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU) include Rabbit Valley gilia, pygmy rabbit, Greater sage-grouse, and the California condor. Fluid mineral development could adversely impact these species. Potential impacts to SSS from fluid mineral development are greatest under Alternative A. Although this alternative provides protection to sage-grouse lekking habitat by prohibiting surface disturbing activities within ¼ mile of leks from March 15 through June 1, it doesn't provide protection against surface disturbing activities within sage-grouse nesting/brooding habitat. Therefore, this alternative is less protective of SSS inhabiting sagebrush communities than Alternative N.

Leasable Minerals—Coal

Generally, impacts would be the same as those described under Alternative N. However, in regards to Greater sage-grouse, this alternative provides less protection because it doesn't include restrictions on surface disturbing activities within nesting/brooding habitat.

Geophysical

The type of impacts experienced as a result of geophysical exploration would be the same as those described under Alternative N, except that under Alternative A, geophysical explorations would be allowed throughout the RFO, with the exception of WSAs, as determined through site-specific NEPA analysis. Alternative A therefore could result in more potential impacts to SSS than would Alternative N. For example, this alternative provides less protection to Greater sage-grouse because it doesn't include restrictions on surface disturbing activities within nesting/brooding habitat.

Locatable Minerals

The types of impacts experienced as a result of locatable minerals activities would be the same as those described under Alternative N. Under Alternative A, 154,700 acres would continue to be withdrawn from mineral entry. Closing or withdrawing areas from mineral operations would prevent impacts to SSS from these types of activities. This alternative would recommend the least amount of acres for mineral withdrawal, which could result in the most impacts to SSS. This alternative also provides less protection to Greater sage-grouse because it doesn't include restrictions on surface disturbing activities within nesting/brooding habitat.

Salable Minerals

The types of impacts experienced from the disposal of salable minerals would be the same as those described under Alternative N. Alternative A allows sale of mineral materials (salable minerals) on 1,681,100 acres (79% of the RFO). Existing areas of salable mineral disposals have already been substantially impacted; it is likely that SSS do not occur in these areas. However, new sites would be subject to NEPA review and consultation with USFWS, which would protect SSS. If salable minerals exist within Greater sage-grouse habitat, this alternative would provide less protection than Alternative N because it doesn't include restrictions on surface disturbing activities within nesting/brooding habitat.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Under Alternative A, no eligible rivers would be recommended or managed as suitable. The outstandingly remarkable values, tentative classification, and free-flowing nature of these river segments would not be protected. Thus, SSS such as the Mexican spotted owl and bald eagle would not receive any additional benefit.

Areas of Critical Environmental Concern

Under Alternative A, no ACECs would be designated. No special management to protect relevant and important values would be provided to SSS or their habitat. Impacts, however, would be little changed from Alternative N because three of the four ACECs are within WSAs and the other—North Caineville Mesa—is virtually inaccessible. ACECs provide limited protection for SSS by restricting many surface-disturbing activities.

Proposed RMP

Impacts from Soil Resources

Impacts would be the same as those described under Alternative N.

Impacts from Water Resources

Impacts would be the same as those described under Alternative N.

Impacts from Vegetation

Impacts from riparian, vegetation, and noxious weeds/invasive species management would be the same as those described under Alternative A.

The types of impacts experienced as a result of insect pest management would be similar to those described under Alternative N, except that implementation of the Proposed RMP would allow for pest-control treatments when the area economic threshold is exceeded. This action would likely be implemented only during large insect outbreaks, such as outbreaks of grasshoppers and Mormon crickets. The use of insecticides within viable and occupied special status plant species habitat during large outbreaks could benefit the species by reducing competition for available food. However, adverse impacts would also be realized in the form of decreased plant pollinators and reduced forage base for special status wildlife species.

Impacts from Cultural Resources

Impacts would be similar to those described under Alternative A, except that fewer cultural resource sites would be allocated and managed for public use. This allocation, which emphasizes public education and interpretation of cultural resources, would increase visitation to sites. However, human disruption to SSS would affect only relatively small, localized areas and would occur in fewer areas than under Alternative N or A.

The Proposed RMP would emphasize several new priority inventory areas. Many SSS are located in these inventory areas. Potential adverse effects to SSS as a result of cultural resources inventories would include surface-disturbing activities that could result in nest abandonment, habitat alteration, or loss of individual plants. Significance of the impacts would depend on the exact location of the designated area and the intensity of the inventory.

Impacts from Paleontological Resources

Impacts would be the same as those described under Alternative N.

Impacts from Visual Resources

The types of impacts under the Proposed RMP would be similar to those described under Alternative A. However, more acres would be designated as VRM Class I or II (696,700 acres, or 33% of the RFO), which would protect SSS by restricting surface-disturbing activities in these areas.

Under the Proposed RMP, 393,100 acres (18%) would be designated as VRM Class III and 1,038,200 (49%) would be managed as VRM Class IV. These areas, which can allow for greater landscape modification and therefore greater surface disturbance, could be subject to such actions as complete vegetation removal, which would drastically alter (at least in the short term) the habitat for SSS. The Proposed RMP would designate more acres as VRM Class III or IV than would Alternative C or D, but fewer acres than would Alternative N or A.

Impacts from Special Status Species

Generally, impacts would be the same as those described under Alternative N. However, the Proposed RMP has additional protections for sage grouse habitat. This includes managing the area as open to leasing subject to major constraints (NSO) within ½ mile of Greater sage-grouse leks and prohibiting surface disturbing or otherwise disruptive activities within 2 miles of a lek from March 15 through July 15, and within sage-grouse winter habitat from December 15 through March 14 (see Appendix 11 for exceptions, waivers, and modifications). Implementation of these stipulations would directly benefit sage-grouse by protecting habitat during the breeding, brood rearing, and winter seasons. Other SSS that inhabit these areas would also benefit. Therefore, the Proposed RMP provides greater protection to sage-grouse and potentially other SSS than either Alternative N or A.

Impacts from Fish and Wildlife

Proposed actions such as habitat manipulations and range developments could result in short-term adverse impacts to SSS, such as Mexican spotted owl and bald eagle, and could detrimentally influence their behavior. Additionally, habitat manipulations and developments could also reduce populations and alter habitat of special status plant species such as Cronquist wild buckwheat.

Short-term adverse impacts could result from vegetation treatments that require the use of heavy equipment. Human disturbance and noise associated with the use of heavy equipment could temporarily disperse Mexican spotted owls and bald eagles from occupied habitats. Adverse direct impacts could also result from accidental chemical drift from pesticide use in nearby areas. These activities have the potential to remove suitable habitat or other desired vegetation for SSS. Additionally, habitat manipulations and developments could also reduce populations and alter habitat of special status plant species such as Cronquist wild buckwheat. Vegetation treatments would likely benefit SSS and their prey over the long-term by providing additional forage.

Implementation of the Proposed RMP would result in seasonal and spatial stipulations to protect desert bighorn sheep habitats during lambing and other sensitive times during their lifecycles. However, exceptions, waivers, and modifications could be granted on a case-by-case basis. Protective stipulations placed on crucial habitats that overlap with SSS' habitat would reduce adverse effects caused by surface-disturbing activities.

Surface-disturbing activities could contribute to decreased air quality and increased soil erosion, soil compaction, introduction and spread of invasive and noxious weeds, crushing of plants, habitat degradation, and the incidental take of listed wildlife species. Restrictions or stipulations of surface-disturbing activities within wildlife habitats that overlap with SSS habitat could benefit SSS within the restricted areas. The restrictions would reduce adverse effects incurred by surface disturbances that could harm SSS. The Proposed RMP would prohibit surface-disturbing activities in crucial deer and elk habitat

from December 1 through April 15, and in crucial desert bighorn habitat from April 15 through June 15. Mitigation measures would be required for pronghorn antelope from May 15 through June 15. However, exceptions, waivers, and modifications could be granted on a case-by-case basis. The additional surface restrictions and mitigations related to other wildlife species would indirectly benefit SSS located in these areas, by limiting habitat disturbance. SSS that would benefit from these surface restrictions include the Utah prairie dog, pygmy rabbit, Greater sage-grouse, Mexican spotted owl, and bald eagle.

Impacts from Wild Horses and Burros

The types of impacts experienced as a result of wild horse and burro management would be similar to those described under Alternative N, except that the Proposed RMP would manage the Canyonlands HMA for 60–100 wild burros. New burros could be introduced to maintain genetic variability. Under the Proposed RMP, activities including the introduction and gathering of wild burros would have the potential to adversely affect the Mexican spotted owl, as described under Alternative N.

Impacts from Fire and Fuels Management

The types of impacts experienced under the Proposed RMP would be similar to those described under Alternative N, except that the Proposed RMP would include stabilization efforts to sustain ecosystems, improve public health, improve safety, and help communities protect infrastructure. Priority would be given to areas that pose a threat to life and property and areas with a potential for invasive weeds. As previously discussed, stabilization efforts would have the potential to benefit SSS through decreased erosion and improved habitat and vegetation conditions but would also result in short-term adverse impacts that would alter habitat.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under the Proposed RMP, non-WSA lands with wilderness characteristics (78,600 acres) would be protected from impacts that could degrade wilderness values. This protection would limit impacts to SSS and their habitat, where those species and habitat lie within the protected lands. For example:

- Of 365,500 acres of Mexican spotted owl critical habitat within the RFO, 14,300 acres (4%) are within the non-WSA lands with wilderness characteristics managed for those characteristics. Protecting the wilderness characteristics areas would reduce or eliminate potential impacts to the owls and owl habitat within these areas.
- Of 364,300 acres of potential habitat for the Wright fishhook cactus, 20,900 acres (6%) are within the non-WSA lands with wilderness characteristics managed for those characteristics. Protecting the wilderness characteristics areas would likewise protect the cacti in these areas from surface-disturbing activities, notably cross-country OHV use.

Impacts from Forestry and Woodland Products

Forest and Woodland Products Harvesting

The types of impacts experienced as a result of forest and woodland products harvesting would be similar to those described under Alternative N, except that commercial and non-commercial harvesting would be allowed throughout the RFO (with the exception of WSAs and the one suitable WSR corridor recommended under the Proposed RMP). Thus, impacts from this type of activity would occur over a larger area than under Alternative N but over a smaller area than under Alternative A.

Seed and Live Plant Collection

The types of impacts experienced as a result of seed and live plant collecting would be similar to those described under Alternative N, except that the designation of specific areas for seed and live plant collection would be considered under the Proposed RMP (with the exception of WSAs and the 1

recommended suitable WSR corridor). The exclusion of these areas from live plant and seed collection activities would reduce the adverse impacts to SSS that occupy these areas. If specific areas that exclude occupied SSS habitat are designated for seed collection, adverse effects that would result from seed and plant collection activities could be reduced. If occupied SSS habitat is considered for seed collection, NEPA analysis and consultation under Section 7 of the ESA would be required, thus reducing the potential for adverse impacts.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

The types of impacts experienced as a result of recreation management would be similar to those described under Alternative A. However, the Proposed RMP would establish five SRMAs (860,390 acres) to manage recreational use and to mitigate impacts caused by this use, such as uncontrolled camping, parking, and other activities. The Proposed RMP would propose 24,400 acres at Factory Butte and 90 acres at Big Rocks as OHV SRMAs, thereby decreasing the potential for impacts to SSS, as compared to Alternative A.

In the Factory Butte SRMA, no Threatened and/or Endangered (T&E) species (as per ESA of 1973) or Candidate plant species were found at any of the locations at which surface disturbance is proposed (Appendix 18). Therefore, no damage to T&E plants would be caused by the construction of fences or kiosks, but the presence of these facilities would help to effectively enforce OHV management prescriptions.

The Proposed RMP allows vehicles to pull off of designated routes (outside WSAs) as much as 50 feet to either side of the centerline (for parking/staging) and as much as 150 feet to either side of the centerline (for camping). Although these allowances could result in vehicles generally impacting SSS, the area of potential impact would be less than under either Alternative N or A.

Impacts from Travel Management

The types of impacts experienced as a result of travel management would be similar to those described under Alternative N, except that implementation of the Proposed RMP would result in 9,890 acres that are open to cross-country OHV use. These open areas include populations and habitat of Wright fishhook cactus. OHV use could be more concentrated in this smaller area, and would likely have more adverse effects per acre. Impacts of OHV use on special status plant species could involve habitat disturbance and increased access for illegal collectors. OHV use within SSS habitats has the potential to lead to direct mortality of the species, through the crushing of plants by tires, and indirect mortality, through increases in erosion and sedimentation. The increasing use of OHVs on BLM land could also transport noxious and invasive weed seeds from infested areas to uninfested areas. Surface disturbance associated with OHV use (e.g., crushing of vegetation and soil disturbance) could increase the susceptibility of native plant communities to weed establishment and could modify soil conditions so that soils are unsuitable for establishment by native species.

Areas, including those that contain SSS habitat, that are either closed to OHV use or that limit use to designated routes would be protected from the surface-disturbing activities associated with this activity. The Proposed RMP designates 209,900 acres as closed to OHV use and 1,908,210 acres as limited, thus providing more protection to SSS than either Alternative N or A because substantially fewer areas are open to OHV use. The Proposed RMP would provide greater protection to Greater sage-grouse than Alternatives N and A by limiting OHV use to designated routes in all sage-grouse habitats including breeding (leks), nesting, brood-rearing and wintering habitats. The Proposed RMP also provides timing

limitations on surface disturbing or otherwise disruptive activities within breeding, brood-rearing, and winter habitat. These actions to protect sage grouse habitat would also benefit other SSS inhabiting sagebrush habitats (e.g., pygmy rabbit, Utah prairie dog).

Under the Proposed RMP, there would be 4,277 miles of routes available for use by the public, and 345 miles would be closed. The Proposed RMP designates routes to minimize harassment or significant disruption of wildlife. The Proposed RMP also gives special attention to SSS and their habitats. Many of the routes that are restricted or closed are located in areas in which SSS such as the Mexican spotted owl, last chance townsendia, Winkler pincushion cactus, Rabbit Valley gilia, pygmy rabbit, and the Wright fishhook cactus exist. Limited or no access to these areas would reduce adverse effects to SSS that could result from OHV use.

Impacts from Lands and Realty

Land Tenure Adjustments

Impacts would be the same as those described under Alternative N.

Withdrawals

Implementation of the Proposed RMP would include recommending two ACECs (2,530 acres), one suitable WSR segment (5 miles), and developed recreation sites for mineral withdrawal. Several SSS, including Mexican spotted owl, Wright fishhook cactus, and Winkler pincushion cactus, are located in these areas. Withdrawing these areas from mineral entry would reduce adverse impacts to SSS that could result from mineral developments in these areas.

Rights-of-Way and Other Land Use Authorizations

The types of impacts experienced as a result of land use authorizations would be similar to those described under Alternative N, except that fewer ROW avoidance areas would be proposed under the Proposed RMP. Because consultation with USFWS and NEPA review would be required for new ROWs or other land use authorizations, impacts to SSS would be negligible.

Wind and Solar Energy

Implementation of the Proposed RMP would allow wind and solar energy exploration and development throughout the RFO, except for in WSAs, ACECs, areas managed as open to leasing subject to major constraints (NSO), migratory bird habitats, raptor nesting complexes, threatened and endangered species habitats, and VRM Class I or II areas. The restriction on wind and solar development within these areas would likely benefit federally listed and non-listed special status bird species, including migratory species, by providing sites in which conflicts between birds and wind and solar facilities would be avoided. Potential species involved would include the Southwestern willow flycatcher, bald eagle, Mexican spotted owl, Greater sage-grouse, ferruginous hawk, Western yellow-billed cuckoo, and California condor. Restriction of wind and solar exploration activities located in WSAs and ACECs could indirectly benefit other SSS, such as the pygmy rabbit (*Brachylagus idahoensis*), that may be within those areas. The potential impacts that wind and solar energy would have on SSS would be less than under Alternative N or A because the Proposed RMP would include more areas in which restrictions would apply.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Under the Proposed RMP, 608,700 acres (29% of the RFO) would be open to leasing subject to the standard terms and conditions; 917,500 acres (43%) would be open to leasing subject to moderate constraints (TL, CSU); 154,500 acres (7%) would be open to leasing subject to major constraints (NSO),

and 447,300 (21%) would be closed to leasing. SSS that are located in areas that are open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU) include the Rabbit Valley gilia, Greater sage-grouse, pygmy rabbit, and the California condor. Fluid mineral development could adversely impact these species. The Proposed RMP allows NSO within ½ mile of Greater sage-grouse leks and prohibits surface disturbing or otherwise disruptive activities within 2 miles of a lek from March 15 through July 15, and within sage-grouse winter habitat from December 15 through March 14 (see Appendix 11 for exceptions, waivers, and modifications). These stipulations provide greater protection to sage-grouse and other SSS that may inhabit these areas (e.g., pygmy rabbits) compared to Alternatives N and A.

Leasable Minerals—Coal

Generally, impacts would be the same as those described under Alternative N. However, the Proposed RMP allows NSO within ½ mile of Greater sage-grouse leks and prohibits surface disturbing or otherwise disruptive activities within 2 miles of a lek from March 15 through July 15, and within sage-grouse winter habitat from December 15 through March 14 providing greater protection to sage-grouse and other SSS that may inhabit these areas (e.g., pygmy rabbits) compared to Alternatives N and A.

Geophysical

The type of impacts experienced as a result of geophysical exploration would be the same as those described under Alternative N, except that under the Proposed RMP, geophysical explorations would be allowed throughout the RFO with the exception of WSAs, suitable WSR corridors (one segment with a tentative classification of Wild—5 miles), and ACECs (2,530 acres), as determined through site-specific NEPA analysis. The Proposed RMP therefore could result in more impacts to SSS than would Alternative N, C, or D but less than Alternative A. The Proposed RMP allows NSO within ½ mile of Greater sage-grouse leks year round and prohibits surface disturbing or otherwise disruptive activities within 2 miles of a lek from March 15 through July 15, and within sage-grouse winter habitat from December 15 through March 14. Therefore, it provides greater protection to sage-grouse and other SSS that may inhabit these areas (e.g., pygmy rabbits) compared to Alternatives N and A.

Locatable Minerals

The types of impacts experienced as a result of minerals and energy would be similar to those described under Alternative N. Under the Proposed RMP, 176,200 acres would be recommended for withdrawal from mineral entry. Closing or withdrawing areas from mineral operations would prevent impacts that these types of activities could cause to SSS. The Proposed RMP would recommend fewer acres for mineral withdrawal than would Alternative C or D but more acres than would Alternative N or A. The Proposed RMP allows NSO within ½ mile of Greater sage-grouse leks and prohibits surface disturbing or otherwise disruptive activities within 2 miles of a lek from March 15 through July 15, and within sage-grouse winter habitat from December 15 through March 14. Therefore, it provides greater protection to sage-grouse and other SSS that may inhabit these areas (e.g., pygmy rabbits) compared to Alternatives N and A.

Salable Minerals

The type of impacts experienced from the disposal of salable minerals would be the same as those described under Alternative N. The Proposed RMP allows the sale of mineral materials (salable minerals) on 1,680,700 acres (79% of the RFO). Existing areas of salable mineral disposals have already been substantially impacted; it is unlikely that SSS occur in these areas. However, new sites would be subject to NEPA review and consultation with USFWS, which would protect SSS. If salable minerals exist within Greater sage-grouse habitat, the Proposed RMP would provide greater protection than Alternatives N and A because it allows NSO within ½ mile of Greater sage-grouse leks year round, and prohibits surface

disturbing or otherwise disruptive activities within 2 miles of a lek from March 15 through July 15, and within sage-grouse winter habitat from December 15 – March 14.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Under the Proposed RMP, one river segment (the Fremont River in Fremont Gorge—5 total miles) would be recommended as suitable for WSR designation. Managing this area as suitable for inclusion in the National Wild and Scenic River System (NWSRS) would benefit species such as the Mexican spotted owl and bald eagle, both of which use this area. A lack of potential for surface-disturbing activities would also result in the protection of habitat used by the prey of the Mexican spotted owl.

Areas of Critical Environmental Concern

Under the Proposed RMP, two ACECs would be designated: North Caineville Mesa (2,200 acres) and Old Woman Front Research Natural Area (RNA) (330 acres). Habitat for the Wright fishhook cactus, Winkler pincushion cactus, and bald eagle is included within these ACECs. The ACECs would provide protection for SSS by restricting many surface-disturbing activities. Special management of these ACECs would include closing to OHV use, managing as a ROW avoidance areas, managing oil and gas leasing as open with NSO, unavailable for livestock grazing, and closed to harvesting of woodland products (Old Woman Front). These management prescriptions to protect relevant and important values would also protect the SSS that occur in the ACECs.

Alternative C

Impacts from Soil Resources

Impacts would be the same as those described under Alternative N.

Impacts from Water Resources

Impacts would be the same as those described under Alternative N.

Impacts from Vegetation

The types of impacts experienced as a result of riparian management would be similar to those described under Alternative N, except that the size of the buffer zone in which no surface disturbance would be allowed would be 660 feet on each side of the riparian area under Alternative C (compared with 500 feet under Alternative N). Thus, Alternative C would protect a larger area around the riparian/wetland zones from surface-disturbing activities.

The types of impacts experienced as a result of vegetation management would be similar to those described for Alternative N, except that Alternative C would allow for vegetation management only through natural processes. Implementing this alternative would have no adverse effects on SSS, resulting from surface-disturbing or vegetation manipulation activities. However, the potential for beneficial impacts would be reduced because the types of treatment methods proposed under Alternative C could be less effective than conventional vegetation treatments and might not be effective in all vegetation communities. This reduction could result in the loss of existing vegetation cover, indirectly decreasing the ecological condition of the treated area.

The types of impacts experienced as a result of noxious weed and invasive species management would be similar to those described under Alternative N. However, implementation of Alternative C would initiate

an attempt to control noxious and invasive weeds through treatment methods that mimic natural processes. Implementation of this alternative could make control of some invasive species difficult because of lack of suitable substitute treatments; using fire as a control tool for species such as tamarisk, could increase the growth and spread of non-native species and could allow the spread of invasive species and displacement of desirable vegetation. This management could have indirect adverse effects on SSS because noxious and invasive weeds would likely expand their range and could alter suitable special status plant species habitat and reduce available forage for special status wildlife species such as the Utah prairie dog and the pygmy rabbit. In addition, weeds could compete with special status plant species for available space and nutrients. The short-term adverse effects that could result from surface-disturbing activities (as discussed under Alternative A) would not be realized. Beneficial impacts resulting from weed-control treatments through natural processes within SSS habitat would be limited.

The types of impacts experienced as a result of insect pest management would be similar to those described under Alternative N. However, implementation of Alternative C would result in no immediate beneficial or adverse impacts caused by pest control treatments within special status plant species habitat because no control measures would be implemented. However, SSS could be affected if insect pests proliferate to the point of removing large amounts of potential forage and thus changing the landscape or habitat.

Impacts from Cultural Resources

Impacts would be similar to those described under the Proposed RMP, except that fewer cultural resource sites would be allocated and managed for public use under Alternative C. This allocation, which emphasizes public education and interpretation of cultural resources, would increase visitation to sites. However, human disruption to SSS would affect only relatively small, localized areas and would occur in fewer areas than under Alternative N or A.

Impacts from Paleontological Resources

Impacts would be the same as those described under Alternative N.

Impacts from Visual Resources

The types of impacts experienced under Alternative C would be similar to those described for the Proposed RMP. However, under Alternative C, more acres would be designated as VRM Class I or II (677,500 acres, or 32% of the RFO), which would protect SSS by restricting surface-disturbing activities in these areas.

Under Alternative C, 509,100 acres (24%) would be designated as VRM Class III and 941,400 (44%) would be designated as VRM Class IV. These areas, which would be subject to actions that allow for greater landscape modification and therefore greater surface disturbance, could be subject to such actions as complete vegetation removal, which would drastically alter (at least in the short-term) the habitat for SSS. Alternative C would designate more acres as VRM Classes III and IV than would Alternative D but fewer acres than would Alternative N or A or the Proposed RMP.

Impacts from Special Status Species

Impacts would be similar as those described under the Proposed RMP. Although Alternative C does not include timing limitations on surface disturbing activities in sage grouse winter habitat, this habitat is mostly within crucial mule deer habitat which does have a timing limitation on such activities from December 15 through April 15.

The protections that do exist for sage-grouse under Alternative C would apply to other SSS whose habitat overlaps that of the sage-grouse (e.g., pygmy rabbit, Utah prairie dog).

Impacts from Fish and Wildlife

The types of impacts experienced as a result of fish and wildlife management would be similar to those described under the Proposed RMP, except that Alternative C would implement seasonal and spatial stipulations to protect desert bighorn sheep habitats during lambing and other sensitive times during their lifecycles. Stipulations placed on crucial habitat management areas that overlap with SSS habitat would reduce adverse effects caused by surface-disturbing activities that could harm SSS.

Alternative C also prohibits surface-disturbing activities in crucial and high-value deer and elk habitat from December 1 through April 15, in crucial desert bighorn habitat from April 15 through June 15, and in crucial pronghorn antelope habitat from May 15 through June 15. The additional surface restrictions and mitigations related to other wildlife species would indirectly benefit SSS located in these surface-restriction areas, by limiting habitat disturbance. SSS that would benefit from these surface restrictions would include the Utah prairie dog, pygmy rabbit, Greater sage-grouse, Mexican spotted owl, and bald eagle.

Impacts from Wild Horses and Burros

The types of impacts experienced as a result of wild horse and burro management would be similar to those described under Alternative N, except that Alternative C would propose to manage the Canyonlands HMA for 120–200 wild burros. New burros could be introduced to maintain genetic variability. Under Alternative C, activities such as the introduction and gathering of wild burros would have the potential to adversely affect the Mexican spotted owl, as described under Alternative N.

Impacts from Fire and Fuels Management

The types of impacts experienced under Alternative C would be similar to those described under the Proposed RMP, except that average annual treatments would be less under Alternative C (26,000 acres). As stated previously, prescribed fires and wildland fires have the potential to adversely affect SSS. However, habitat manipulations through the use of fire could benefit SSS over the long term through improved vegetative conditions. With fewer acres treated under Alternative C, there would be less potential adverse impacts but also less potential beneficial impacts resulting from habitat manipulations.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under Alternative C, resulting in no additional protection for SSS.

Impacts from Forestry and Woodland Products

Forest and Woodland Products Harvesting

The types of impacts experienced as a result of forest and woodland products harvesting would be similar to those described under Alternative N, except that commercial and non-commercial harvesting would be allowed throughout the RFO (with the exception of WSAs and suitable WSR corridors) under Alternative C. Thus, impacts from this type of activity would occur over a smaller area than under Alternative A or the Proposed RMP. In addition, the rejuvenating benefits to habitats resulting from the clearing of woodland areas would not be realized in the areas in which forest and woodland products harvesting was precluded.

Seed and Live Plant Collection

The types of impacts experienced as a result of seed and live plant collection would be similar to those described under Alternative N, except that the designation of specific areas for seed and live plant collection would be considered under Alternative C (with the exception of WSAs and suitable WSR corridors). The exclusion of these areas from live plant and seed collection activities would reduce the

adverse impacts to SSS that occupy these areas. If specific areas that exclude occupied SSS habitat were designated for seed collection, adverse effects that would result from seed and plant collection activities could be reduced. If occupied SSS habitats are considered as areas for seed collection, NEPA analysis and Section 7 consultation would be required, reducing the potential for adverse impacts. Alternative C would preclude more areas from seed and live plant collection than would Alternative N or A or the Proposed RMP but less than would Alternative D.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

The types of impacts experienced as a result of recreation management would be similar to those described under Alternative A. However, Alternative C would establish four SRMAs (930,000 acres) to manage recreational use and to mitigate impacts caused by this use. Alternative C would establish no SRMAs, thus decreasing the potential for impacts that this type of use could have on SSS.

Managing the Dirty Devil/Robbers Roost SRMA (375,800 acres) for dispersed recreation in a primitive setting would indirectly reduce the potential for surface disturbance (and associated damage to SSS) caused by recreation. Managing the Henry Mountains SRMA (533,900 acres) for primitive and semi-primitive recreation and managing the Sevier Canyon SRMA (7,500 acres) for scenic values would indirectly maintain or reduce the potential for disturbance and impacts to SSS. Managing the Capitol Reef Gateway SRMA (12,800 acres) for a natural recreation experience and the development of facilities could have localized, site-specific impacts, although consultation with USFWS and NEPA review would be required prior to construction of any facilities.

Alternative C would allow vehicles to pull off of designated routes (outside WSAs) as much as 25 feet to either side of the centerline (for parking/staging); camping would be allowed only in designated campsites, with travel between campsites allowed only on designated routes. These management prescriptions would minimize disturbance to SSS and would result in less disturbance than under Alternative N or A or the Proposed RMP.

Impacts from Travel Management

The types of impacts experienced as a result of travel management would be similar to those described under Alternative N. However, under Alternative C, no acres would be open to cross-country OHV use; 1,445,000 acres would be limited to OHV use on designated routes only; and 683,000 acres would be closed to OHV use. By eliminating areas that are open to unrestricted OHV use, adverse impacts to SSS would be substantially reduced. As in the Proposed RMP, Alternative C would limit OHV use to designated routes in all sage-grouse habitats including breeding (leks), nesting, brood-rearing and wintering habitats.

Under Alternative C, there would be 3,192 miles of designated routes and 1,188 miles of routes that would be closed. Alternative C would designate routes to minimize harassment or significant disruption of wildlife. This alternative would also give special attention to SSS and their habitats. Many of the routes that are restricted or closed are located in areas that contain most of the SSS within the planning area. Limited or no access to these areas would reduce adverse effects to SSS that could result from OHV use.

Impacts from Lands and Realty

Land Tenure Adjustments

Impacts would be the same as those described under Alternative N.

Withdrawals

Alternative C recommends withdrawing from mineral entry all or parts of several ACECs, suitable WSR corridors, and developed recreation sites (331,100 acres, or 16% of the RFO). Several SSS, including Mexican spotted owl, Wright fishhook cactus, pygmy rabbit, Rabbit Valley gilia, bald eagle, Utah prairie dog, and Winkler pincushion cactus, are located in these areas. Withdrawing these areas from mineral entry would reduce adverse impacts to SSS that could result from mineral developments.

Rights-of-Way and Other Land Use Authorizations

The types of impacts experienced as a result of land use authorizations would be similar to those described under Alternative N, except that Alternative C would propose more ROW avoidance areas (735,000 acres closed to leasing or open to leasing subject to major constraints (NSO), 12 suitable WSR segments, and 16 ACECs). Because consultation with USFWS and NEPA review would be required, impacts to SSS would be negligible.

Wind and Solar Energy

Alternative C specifically excludes SSS habitats from wind and solar energy developments. This management would help to protect SSS (including bats, migratory birds, and raptors) from any surface-disturbing action that could result from these developments.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Under Alternative C, 491,900 acres (23% of the RFO) would be open to leasing subject to the standard terms and conditions; 901,100 acres (42%) would be open to leasing subject to moderate constraints (TL, CSU); 148,700 acres (7%) would be open to leasing subject to major constraints (NSO); and 586,300 acres (28%) would be closed to leasing. SSS that are located in areas that are open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU) include the Rabbit Valley gilia, Greater sage-grouse, and pygmy rabbit. Fluid mineral development could adversely impact these species. As under the Proposed RMP, this alternative provides stipulations to protect sage grouse breeding and brood-rearing habitat, however it does not allow for NSO within ½ mile of leks or provide timing limitations to protect winter habitat (see Appendix 11 for exceptions, waivers, and modifications). Therefore, it provides greater protection to sage-grouse and other SSS that may inhabit these areas (e.g., pygmy rabbits) compared to Alternatives N and A but less protection than the Proposed RMP.

Leasable Minerals—Coal

Impacts would be the same as those described under the Proposed RMP.

Geophysical

The type of impacts experienced as a result of geophysical exploration would be the same as those described under Alternative N, except that under Alternative C, geophysical explorations would be allowed throughout the RFO with the exception of WSAs, suitable WSR corridors (12 segments—135 miles), and ACECs (886,810 acres), as determined through site-specific NEPA analysis. Alternative C could result in more potential impacts to SSS than Alternative D but less impacts than Alternative N or A or the Proposed RMP.

Locatable Minerals

The types of impacts that would be experienced from locatable mineral activities would be the same as those described for Alternative N. However, under Alternative C, the location, exploration, and

development of locatable minerals could occur throughout the RFO, except in areas withdrawn from mineral entry (331,100 acres). These areas would include Lonesome Beaver Campground, McMillan Spring Campground, Starr Springs Campground, Dandelion Flat Picnic Area, Hog Springs Picnic Area, Otter Creek Reservoir Recreation Sites, Kingston Canyon Recreation Site, Koosharem Picnic Area, Dirty Devil ACEC, Fremont Gorge/Cockscomb ACEC, Badlands ACEC, Henry Mountains ACEC, Horseshoe Canyon ACEC, Little Rockies ACEC, Rainbow Hills ACEC, and suitable WSR corridors. SSS located in the withdrawn areas would be protected from surface-disturbing activities that could result from locatable minerals activities.

Salable Minerals

The types of impacts experienced from the disposal of salable minerals would be the same as those described for Alternative N. This alternative allows the sale of mineral materials (salable minerals) on 1,541,700 acres (72% of the RFO). Existing areas of salable mineral disposals have already been substantially impacted; it is unlikely that SSS occur in these areas. However, new sites would be subject to NEPA review and consultation with USFWS, which would protect SSS. Alternative C provides greater protection to sage-grouse habitats than Alternatives N and A, but less protection than the Proposed RMP.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Under Alternative C, the Dirty Devil River, Beaver Wash Canyon, Larry Canyon, No Man's Canyon, Robbers Roost Canyon, Sams Mesa Box Canyon, Twin Corral Box Canyon, Fish Creek, Maidenwater Creek, Quitchupah Creek, and the Fremont River in Fremont Gorge and below Capitol Reef National Park to the Caineville ditch diversion would be designated as suitable WSRs. Management to protect their outstandingly remarkable values, tentative classification, and free-flowing nature (including closing to OHV use, closing to leasing, and withdrawing from mineral entry) would benefit the Mexican spotted owl and bald eagle.

Areas of Critical Environmental Concern

Under Alternative C, 16 areas (886,810 acres) would be designated as ACECs: Badlands, Bull Creek, Dirty Devil, Fremont Gorge/Cockscomb, Henry Mountains, Horseshoe Canyon, Kingston Canyon, Little Rockies, Lower Muddy Creek, Old Woman Front, Parker Mountain, Quitchupah, Rainbow Hills, Sevier Canyon, Thousand Lakes Bench, and Special Status Species ACECs. These ACECs contain populations and habitat for all SSS within the RFO. ACECs provide protection for SSS by restricting many surface-disturbing activities, including mineral leasing, OHV use and other motorized recreational activities, wood cutting, and new ROWs.

The Special Status Species ACEC contains 15,100 acres of land that is specifically designated to protect SSS from surface-disturbing activities such as OHV use, adverse recreation impacts, land sales, new ROWs, vegetation treatments, open mineral leasing, and mineral disposals.

Alternative D

Impacts from Soil Resources

Impacts would be the same as those described under Alternative N.

Impacts from Water Resources

Impacts would be the same as those described under Alternative N.

Impacts from Vegetation

Impacts would be the same as those described under Alternative C.

Impacts from Cultural Resources

Impacts would be similar to those described under Alternative C, except that fewer cultural resource sites would be allocated and managed for public use. This allocation, which emphasizes public education and interpretation of cultural resources, would increase visitation to sites. However, human disruption that cultural resource management would cause to SSS would affect only relatively small, localized areas and would occur in fewer areas than under any other alternative.

Impacts from Paleontological Resources

Impacts would be the same as those described under Alternative N.

Impacts from Visual Resources

The types of impacts experienced under Alternative D would be similar to those described under Alternative C, except that more acres would be designated as VRM Class I or II (1,196,300 acres, or 56% of the RFO), thereby protecting SSS by restricting surface-disturbing activities in these areas.

Under Alternative D, 355,100 acres (17%) would be designated as VRM Class III and 576,600 (27%) would be managed as VRM Class IV. These areas, which would be subject to actions that allow for greater landscape modification and therefore greater surface disturbance, could be subject to such actions as complete vegetation removal, which would drastically alter (at least in the short term) the habitat for SSS. This alternative designates far fewer acres as VRM Class III or IV than any other alternative, so impacts to SSS because of VRM class designations would be the least of all alternatives.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative C.

Impacts from Fish and Wildlife

Impacts would be the same as those described under Alternative C.

Impacts from Wild Horses and Burros

Impacts would be the same as those described under Alternative N.

Impacts from Fire and Fuels Management

Impacts would be the same as those described under Alternative C.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under Alternative D, non-WSA lands with wilderness characteristics (682,600 acres) would be protected from impacts that could degrade their wilderness values. This management would limit impacts to SSS and their habitat, where those species and habitat lie within the protected lands. For example:

- Of 635,100 acres within the RFO identified as potential brooding areas for the Greater sage-grouse, less than 1,000 acres are included within the non-WSA lands with wilderness characteristics. Protecting the wilderness characteristics areas would have little impact on the sage-grouse.

- Of 365,500 acres of Mexican spotted owl critical habitat within the RFO, 157,300 acres (43%) are within the non-WSA lands with wilderness characteristics. Protecting the wilderness characteristics areas would reduce or eliminate potential impacts to the owls and owl habitat within these areas.
- Of 364,300 acres of potential habitat for the Wright fishhook cactus, 206,400 acres (57%) are within the non-WSA lands with wilderness characteristics. Protecting the wilderness characteristics areas would likewise protect the cacti from surface-disturbing activities, notably cross-country OHV use, in more than half of the identified habitat.

Impacts from Forestry and Woodland Products

Forest and Woodland Products Harvesting

The types of impacts experienced as a result of forest and woodland products harvesting would be similar to those described under Alternative N. However, under Alternative D, commercial and non-commercial harvesting would not be allowed in WSAs, suitable WSR corridors, or non-WSA lands with wilderness characteristics. Thus, impacts from this type of activity would occur over a much smaller area than under any other alternative, potentially providing the greatest benefit to SSS. However, the rejuvenating benefits to habitats from the clearing of woodland areas would not be realized.

Seed and Live Plant Collection

The types of impacts experienced as a result of seed and live plant collecting would be similar to those described under Alternative N, except that the designation of specific areas for seed collection (with the exception of WSAs, suitable WSR corridors, and non-WSA lands with wilderness characteristics) would be considered under Alternative D. The exclusion of these areas from live plant and seed collection activities would reduce the adverse impacts to SSS that occupy these areas. If specific areas that exclude occupied SSS habitat were designated for seed collection, adverse effects that would result from seed and plant collection activities could be reduced. If occupied SSS habitat was considered for seed collection, NEPA analysis and consultation under Section 7 of the ESA would be required, reducing the potential for adverse impacts. Alternative D would preclude more areas from seed and live plant collection than any other alternative, thus potentially providing the greatest benefit to SSS.

Impacts from Livestock Grazing

Impacts would be similar to those described under Alternative N, except that Alternative D would prohibit surface-disturbing activities associated with the construction and implementation of range improvements (both structural and non-structural) within non-WSA lands with wilderness characteristics (682,600 acres). This restriction would protect SSS in these areas by eliminating any potential for impact resulting from range-improvement construction.

Impacts from Recreation

The types of impacts experienced as a result of recreation management would be similar to those described under Alternative C, except that Alternative D would establish seven SRMAs (1,358,100 acres) to manage recreational use and to mitigate impacts caused by this use. No SRMAs would be established for OHV use, thereby decreasing the potential for impacts to SSS from this type of use. As described under Alternative C, the development of facilities could have localized site-specific impacts, although consultation with USFWS and NEPA review would be required prior to construction of any facilities.

Impacts from Travel Management

The types of impacts experienced as a result of travel management would be similar to those described for Alternative N, except that under Alternative D, no acres would be open to cross-country OHV use;

972,800 acres would be limited to designated routes; and 1,155,200 acres would be closed to OHV use. The fewest potential impacts that OHV use would cause to SSS would occur under Alternative D.

Alternative D would propose 3,043 miles of designated routes and 1,242 miles of routes that would be closed. Many of the restricted or closed routes would be in areas that contain most of the SSS within the planning area. Reducing access to these areas would reduce adverse effects to SSS that could result from OHV use. The least impacts that route designations would cause to SSS would occur under Alternative D.

Impacts from Lands and Realty

Land Tenure Adjustments

Impacts would be the same as those described under Alternative N.

Withdrawals

Alternative D would recommend withdrawing from mineral entry all non-WSA lands with wilderness characteristics, all or parts of several ACECs, suitable WSR corridors, and developed recreation sites (903,900 acres, or 42% of the RFO)—the most under any of the alternatives. Several SSS, including Mexican spotted owl, Wright fishhook cactus, pygmy rabbit, Rabbit Valley gilia, bald eagle, Utah prairie dog, and Winkler pincushion cactus, are located in these areas. Withdrawing these areas from mineral entry would reduce adverse impacts to SSS in these areas that could result from mineral developments. More than any other alternative, Alternative D would reduce potential impacts from mining activity.

Rights-of-Way and Other Land Use Authorizations

The types of impacts experienced as a result of land use authorizations would be similar to those described under Alternative N, except that more ROW avoidance areas (1,203,800 acres closed to leasing or open to leasing subject to major constraints (NSO), 12 suitable WSR segments, and 16 ACECs) would be proposed under Alternative D. Because consultation with USFWS and NEPA review would be required for any new ROWs or other land use authorizations, impacts to SSS would be negligible.

Wind and Solar Energy

Impacts would be the same as those described under Alternative C.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Under Alternative D, 290,200 acres (14% of the RFO) would be open to leasing subject to the standard terms and conditions; 634,000 acres (30%) would be open to leasing subject to moderate constraints (TL, CSU); 43,300 acres (2%) would be open to leasing subject to major constraints (NSO); and 1,160,500 acres (54%) would be closed to leasing. SSS in areas that are open to leasing or open to leasing subject to moderate constraints (TL, CSU) include the Rabbit Valley gilia, Greater sage-grouse, and pygmy rabbit. Potential impacts to SSS from fluid mineral development would be least under Alternative D than under any other alternative.

Leasable Minerals—Coal

Impacts would be the same as those described under the Proposed RMP.

Geophysical

Under Alternative D, BLM would allow geophysical explorations outside of WSAs, non-WSA lands with wilderness characteristics, WSR corridors, and ACECs, as determined through site-specific NEPA

analysis. Potential impacts to SSS from geophysical exploration would be least under this alternative (of any alternative) because the least amount of land would be available for this type of activity.

Locatable Minerals

The types of impacts that would be experienced from locatable mineral activities would be the same as those described under Alternative N. However, under Alternative D, the location, exploration, and development of locatable minerals could occur throughout the RFO, except in areas withdrawn from mineral entry (903,900 acres). These areas would include Lonesome Beaver Campground, McMillan Spring Campground, Starr Springs Campground, Dandelion Flat Picnic Area, Hog Springs Picnic Area, Otter Creek Reservoir Recreation Sites, Kingston Canyon Recreation Site, Koosharem Picnic Area, Dirty Devil ACEC, Fremont Gorge/Cockscomb ACEC, Badlands ACEC, Henry Mountains ACEC, Horseshoe Canyon ACEC, Little Rockies ACEC, Rainbow Hills ACEC, suitable WSR corridors, and non-WSA lands with wilderness characteristics. SSS located in the withdrawn areas would be protected from surface-disturbing activities that could result from locatable minerals activities. Potential impacts to SSS from locatable mineral development would be least under this alternative, compared to the other alternatives.

Salable Minerals

With the implementation of Alternative D, 1,160,500 acres would be closed to disposal of salable minerals (WSAs, non-WSA lands with wilderness characteristics, the Dirty Devil ACEC, Fremont Gorge/Cockscomb ACEC, Badlands ACEC, Henry Mountains ACEC, Horseshoe Canyon ACEC, Little Rockies ACEC, Rainbow Hills ACEC, and within one-quarter mile of the high water mark on each bank of the river segment of suitable WSRs). The exclusion of these areas from surface-disturbing mineral materials activities would indirectly benefit SSS that are located within these areas. The disposal of mineral materials on other public lands would be allowed on a case-by-case basis. The potential impact to SSS from mineral material sales would be least under Alternative D (compared to the other alternatives).

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Impacts would be the same as those described under Alternative C.

Areas of Critical Environmental Concern

Impacts would be the same as those described under Alternative C.

4.3.9 Fish and Wildlife

The BLM manages public lands to provide suitable habitat for more than 600 fish and wildlife species. Species analyzed in this section include deer, elk, bison, antelope, bighorn sheep, and migratory birds. Impacts to fish and wildlife from other management programs include loss or alteration of native habitats, increased invasion of noxious weeds and other exotic weed species, decreased water availability, increased habitat fragmentation, changes in habitat and species composition, disruption of species behavior leading to reduced reproductive fitness or increased susceptibility to predation, and direct mortality. Surface-disturbing actions that alter vegetation characteristics (e.g., structure, composition, or production) have the potential to affect habitat suitability for fish and wildlife, particularly when the disturbance removes or reduces cover or food resources. Even minor changes to vegetation communities have the potential to affect resident fish and wildlife populations.

Wildlife populations fluctuate, sometimes widely, in response to natural factors such as the abundance of prey base or extremes in seasonal weather (e.g., severe winters, drought). These factors make it difficult to discern potential impacts on wildlife resulting from specific management actions and from impacts caused by natural factors. Changes or stressors to habitat components (vegetation, water, soil, or air) are likely to cause direct and indirect effects on wildlife and fish. Therefore, potential effects on habitats are the principal focus of this assessment.

Impacts on fish and wildlife include actions that result in habitat alteration, fragmentation, or loss; wildlife displacement; and habitat maintenance and enhancement. Habitat alteration occurs when decisions change the existing habitat character. Surface-disturbing activities, development, or other activities that degrade habitat lead to habitat alteration, fragmentation, or loss. Habitat alteration, fragmentation, and loss affect the usable ranges and routes for wildlife movement. Wildlife displacement occurs when land use activities result in the movement of wildlife into other habitats, increasing stress on individual animals and increasing competition for habitat resources. Impacts to fish and wildlife from displacement depend on the location, extent, timing, or the intensity of the disruptive activity or human presence. Occurrence of these disruptive activities in areas adjacent to fish and wildlife habitat could cause displacement of wildlife. Impacts from displacement would be greater for wildlife species that have limited existing habitat or a low tolerance for disturbance. Habitat maintenance and enhancement can maintain or improve the condition of vegetation and levels of forage species or reduce soil loss through vegetation treatments and restrictions on surface-disturbing activities.

Methods and Assumptions

The analysis of potential impacts to fish and wildlife resources is based on the expertise of BLM resource specialists at the RFO and the Utah State Office. Combined, these staffs possess an extensive knowledge of fish and wildlife resources within the planning area. The impact analysis is also based on review of existing literature and information provided by non-planning team experts in the BLM, the National Park Service (NPS), and other agencies.

Quantifying these impacts is difficult because of the lack of monitoring data for most species. In the absence of quantitative data, best professional judgment was used. Impacts are sometimes described using ranges of potential impacts or in qualitative terms, if appropriate. The intensities of impacts are also described, when possible.

The following assumptions were used in this analysis:

- All surface-disturbing activities would include mitigation to reduce impacts to wildlife resources. Analysis of impacts includes any and all mitigation measures in place.

- Sufficient habitat exists to maintain current fish and wildlife population objectives.
- Disruptive activities would displace wildlife, though some wildlife adaptation would occur.

Environmental Consequences

Impacts to fish and wildlife would likely result from actions proposed under the following resource management programs:

- Soil Resources and Water Resources
- Vegetation
- Visual Resources
- Special Status Species
- Fish and Wildlife
- Wild Horses and Burros
- Fire and Fuels Management
- Non-WSA Lands with Wilderness Characteristics
- Forestry and Woodland Products
- Livestock Grazing
- Recreation
- Travel Management
- Lands and Realty
- Minerals and Energy
- Special Designations.

Other programs were determined to have little or no impact on fish and wildlife.

Alternative N: No Action

Impacts from Soil Resources and Water Resources

Activities conducted under the soil management program are limited to monitoring, implementing support activities, providing information for other BLM programs, and recommending appropriate mitigation. Typical activities implemented under the soil resource program would include mapping soils, maintaining soil databases, identifying timing stipulations, and recommending protective measures for critical soils. For example, implementation of timing stipulations would reduce surface disturbance in areas with high seasonal erosion potential. Proposed decisions to increase soil productivity, reduce erosion, or maintain vegetation cover necessary to avoid accelerated erosion would maintain or improve wildlife habitat.

Implementation of water quality- and quantity-related actions would guide or advise other program actions and activities in a manner conducive to maintaining or improving surface water quality. These actions would be consistent with existing and anticipated uses and applicable state and federal water quality standards. Beneficial impacts include improved habitat for fish and wildlife (including migratory birds) and their associated prey.

Soil and water resources would be managed to avoid surface-disturbing activities within 500 feet of springs and streams, thus reducing or eliminating impacts to fish and wildlife species by preventing degradation of the water sources and associated wildlife habitat. In addition, goals to maintain or restore soil productivity, minimize accelerated soil erosion, and prevent flood or sediment damage would maintain or improve aquatic habitat and water quality for fish and wildlife species.

Impacts from Vegetation

Vegetation Treatments

Managing vegetation by using mechanical, chemical, and wildland or prescribed fire treatments could result in a mix of seral stages throughout the lands managed by the RFO. This management would provide cover, foraging, and nesting areas to maintain diverse wildlife populations. Treatments in pinyon-juniper woodlands, aspen, and sagebrush-steppe communities would return the treated areas to an earlier seral stage of succession, increasing vegetation species and structural diversity. Providing early seral habitats would foster small mammal populations, which serve as prey species for raptors and larger mammals. These habitats also would provide diverse forage and habitat for non-game, big game, prey species, and upland game birds and would create nesting habitat for birds. Vegetation treatments that result in mosaic patches of sagebrush of different ages and structures would benefit Greater sage-grouse. Vegetation manipulation to open closed-canopy communities and provide greater diversity in vegetation type and seral stage would benefit many species of birds and mammals, such as scrub jay and northern goshawk, while adversely affecting those species which prefer closed-canopy pinyon-juniper or sagebrush cover greater than 30%. Overall, proposed decisions for managing vegetation would have beneficial impacts on migratory birds and their habitats. Vegetation treatments could have short-term adverse impacts on migratory birds and their habitats because of loss of nesting habitats immediately following treatments, and could have long-term beneficial impacts as vegetation re-establishes.

Vegetation management activities include fencing, weed treatment, timber harvest, sagebrush management (spraying, mechanical treatment, or burning), and seeding of disturbed or weed-treated areas. Vegetation management activities, especially those using heavy equipment, would result in short-term adverse impacts to fish and wildlife and their habitat. Surface-disturbing activities could result in the alteration of habitat because of soil erosion or sedimentation. Large-scale vegetation management projects, such as sagebrush harrowing or juniper chaining, could impact fish and wildlife or their habitats in the sagebrush-steppe and pinyon-juniper woodlands vegetation types where such treatments would be conducted. No vegetation treatments are proposed in the non-vegetated and desert shrub vegetation types.

Under Alternative N, no acreage or treatment limitation is prescribed. Depending on the timing, location, and project size, treatments could have adverse or beneficial impacts on wildlife habitat; these impacts would be determined by site-specific environmental analysis. For example, in mule deer summer range, reducing the pinyon-juniper component would promote favorable forage conditions. Conversely, reducing sagebrush habitat that provides cover and forage for the Greater sage-grouse would reduce forage availability and canopy cover, rendering the sage-grouse vulnerable to predation.

Management Activities in Riparian and Wetland Areas

The purpose of the riparian and wetland management program is to maintain, restore, or improve riparian habitats. Proposed management actions that would be implemented to protect riparian areas include restrictions on time, space, placement, and the establishment of 500-foot buffer zones around riparian areas. (No surface-disturbing activities would be allowed around the outer edge of springs unless it could be shown that there were no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area.) These buffers would protect and enhance riparian vegetation communities that provide forage and cover for game and non-game mammals, as well as potential nesting sites for neo-tropical migratory birds, raptors, and waterfowl. However, the buffers could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment.

Vegetation treatments and streambank stabilization projects would potentially result in short-term adverse impacts to fish and wildlife species whose habitat is located primarily in riparian and wetland areas. Streambank stabilization and habitat restoration projects could result in the removal of riparian vegetation in these areas. Impacts to fish and wildlife from these activities could include temporary disturbance or

loss of habitat from heavy equipment use, increased human presence, and associated noise. Vegetation treatments in riparian areas could include the use of herbicides, fire, or mechanical removal of exotic plant species such as tamarisk or Russian olive.

In the long term, vegetation treatments and streambank recontouring would likely benefit riparian obligate species by improving or enhancing riparian habitat. Additionally, beneficial impacts to upland species could result from maintaining or improving natural hydrologic watershed processes. Activities to maintain or improve riparian health; such as construction of livestock and recreation exclosures within riparian habitats and habitat rehabilitation projects, would have beneficial impacts on riparian obligate species.

All riparian areas are managed in accordance with the BLM Utah riparian policy. It is the objective of this riparian policy to improve or maintain riparian areas in proper functioning condition. Riparian areas are classified as in "proper functioning condition" when there is adequate vegetation and landform structure present to dissipate stream energy from high flows. This dissipation results in a reduction in erosion, improvement in water quality, filtration of sediment, capture of bedload, and aid in floodplain development. Properly functioning riparian areas also result in an improvement in flood water retention and groundwater recharge, development of root masses that stabilize streambanks against cutting action, development of diverse ponding and channel characteristics necessary for fish production and other uses, and greater support for biodiversity. Continuing to implement this policy would minimize impacts on wildlife species (including migratory birds) that inhabit riparian and wetland areas.

Invasive Species Management

Under Alternative N, approved weed control methods (including preventative management and mechanical, biological, and chemical techniques) would be allowed. Generally, controlling noxious and invasive species would be beneficial for wildlife habitat. However, some species considered invasive (e.g., tamarisk and Russian olive) provide important habitat components for neo-tropical songbirds. Treating noxious weeds could have short-term adverse and long-term beneficial impacts on some species of migratory birds. For example, removing tamarisk would result in lost habitat for Southwestern willow flycatcher and other riparian obligate species until willow communities were re-established.

Depending on the timing, location, and project size, weed treatments could have adverse or beneficial impacts on wildlife habitat; these impacts would be determined by site-specific environmental analysis. Use of herbicides or other chemicals to treat vegetation could impact fish and wildlife species by altering erosion patterns and introducing herbicides and chemicals into the hydrologic system. Increased sediment, loss of habitat integrity, fragmentation of hydrologic networks, and potential chemical introductions could impact water quality. Biological treatments would not cause short-term alteration or displacement of species because the treatments would be implemented over longer periods of time and would be host-specific.

Insect Pest Management

Wildlife could benefit from treatments that target destructive insects such as grasshoppers, cutworms, and Mormon crickets. Actions taken to remove destructive insects would reduce potential competition for available forage. Adverse impacts could also result from accidental chemical drift of pesticides used in nearby areas. Ingestion of pesticides could lead to direct mortality of individual animals or could cause decreased survival of young.

Control of insects in localized areas would likely result in adverse impacts to wildlife species in those areas. The reduction of some specific insect populations within special status bird habitats could alter foraging and nesting behavior by reducing the prey base and by requiring the birds to travel further to

forage. The short-term reduction in herbivorous insects could also result in changes to surrounding vegetation. If insect populations were substantially reduced over a long period, special status bird species could disperse from currently occupied areas, in an effort to find a larger forage base.

Impacts from Visual Resources

In general, VRM class designations would limit or allow surface-disturbing activities in certain areas, thereby affecting wildlife species. VRM Classes I and II, which preserve or retain the existing character of the landscape, would protect wildlife by restricting ground-disturbing activities; VRM Classes III and IV would provide less protection by allowing more changes to the landscape and by being less restrictive of ground-disturbing activities. Under Alternative N, none of the lands managed by the RFO would be classified as VRM Class I; 529,500 acres (25%) would be managed as VRM Class II; 569,000 acres (27%) would be managed as VRM Class III; and 1,029,500 acres (48%) would be managed as VRM Class IV. Managing areas as VRM Class II would reduce surface disturbance and retain existing vegetation, thereby protecting wildlife and wildlife habitat. However, meeting VRM Class II objectives could result in some adverse impacts to migratory birds and their habitats by limiting vegetation treatment options.

Areas managed as VRM Class III or IV (75% of the RFO under this alternative) would be subject to actions that allow for greater landscape modification and therefore greater surface disturbance. These areas could be subject to such actions as complete vegetation removal, which would drastically alter (at least in the short term) wildlife habitat.

Impacts from Special Status Species

Implementation of the SSS program is designed to manage threatened, endangered, candidate, and sensitive species and their habitat. Activities associated with management of SSS could include conducting surveys, habitat improvement projects, and closing areas that contain populations or suitable habitat for SSS to OHV use or other surface-disturbing activities. Under this Alternative, surface-disturbing activities are prohibited near Greater sage-grouse leks from March 1 through July 15 and within nesting/brooding habitat from April 1 through June 15. These stipulations would benefit all wildlife inhabiting these areas. Similarly, protections afforded special status plant species from surface-disturbing and disruptive activities would benefit wildlife and their habitat. These decisions would, in general, minimize impacts that other resource and resource uses and surface-disturbing activities would have on fish and wildlife (including migratory birds) and associated habitat.

Impacts from Fish and Wildlife

Habitat manipulations, such as prescribed burns and chemical and biological controls, typically are used to improve habitat for wildlife. Although the continued maintenance or improvement of wildlife habitats could hold some long-term benefits, there could be short-term adverse impacts such as loss or fragmentation of habitat, loss of individuals because of redistribution of grazing herbivores, or hydrologic changes that could result in temporary sedimentation or changes in natural water regimes. An increase in sedimentation could be particularly harmful to aquatic species in drainages or wetland areas; however, these potential impacts would be localized.

Alternative N would propose restrictions or stipulations of surface-disturbing activities within crucial bison habitat, and crucial deer and elk habitats. These restrictions or stipulations would also benefit other wildlife species within the restricted areas, by reducing adverse effects incurred by surface disturbances that could harm wildlife species. Surface disturbance restrictions in place for other areas (such as WSAs and eligible WSR corridors) would also benefit wildlife species within these areas. In areas in which there are no surface disturbance restrictions, impacts (such as decreased air quality, erosion, soil compaction,

introduction of exotic and noxious weeds, crushing of plants, and habitat modification) could cause mortality to wildlife and disruption to foraging or reproductive behavior.

Alternative N would provide no seasonal or spatial restrictions on surface-disturbing activities in desert bighorn habitat but would require compliance with the *Desert Bighorn Sheep Management Plan.* This plan includes the following goals: 1) Establish optimum populations of bighorn sheep in all suitable habitats within the state; 2) provide good-quality habitat for healthy populations of bighorn sheep; and 3) provide high-quality opportunities for hunting and viewing of bighorn sheep. However, this management plan lacks specific direction on actions to protect bighorn sheep and their habitat from surface-disturbing activities (such as oil and gas development), so potential adverse impacts could be substantial.

Under Alternative N, wildlife reintroductions could be allowed into historic ranges. Wildlife reintroductions could increase species and genetic diversity, augment existing populations, and re-establish species that were previously extirpated.

Impacts from Wild Horses and Burros

Alternative N would allocate 100 AUMs for wild burros in the Canyonlands HMA. Burros compete with wildlife (notably antelope and bighorn sheep) for water and forage. In addition, authorized wild burro activities could impact wildlife habitat during the life of the Proposed RMP. The presence of wild burros and subsequent herd gathering-related actions could adversely impact wildlife through noise, construction of temporary gathering structures, and the trampling of habitat. Herd gathering is conducted by using hazing techniques such as low-flying helicopters, vehicles, and gathering pens. These activities could disrupt foraging behaviors.

Impacts from Fire and Fuels Management

The focus of this analysis is on fire management activities, including wildfire suppression, prescribed fire, and non-fire fuel treatments, rather than on the impacts of wildfire itself. Actions associated with fire management could adversely affect fish and wildlife species and their habitat.

Increased human activity and noise associated with wildland fire suppression and prescribed fire would affect nesting, foraging, or roosting behavior. Foraging, nesting, and communal winter roosting habitats could be lost through the use of heavy equipment, hand tools, and noise associated with intensive human activity. Some snags used for perching, roosting, or nesting could be lost because of suppression operations. However, these snags could be replaced as new snags result from fire mortality. The effects from wildland fire suppression could potentially become long term, depending upon the severity and extent of the activities conducted during a particular fire suppression operation. Although a large fire that requires extensive suppression operations, such as extensive staging areas and fire line construction, could result in long-term adverse effects to fish and wildlife, smaller fires that require less-extensive suppression operations would generally avoid these long-term adverse effects.

Fire suppression activities could adversely affect fish and wildlife species and could cause immediate post-fire alteration or damage of crucial or high-value habitats. Suppression operations could result in harassment, displacement, injury, or mortality during staging, fire-line construction, backburning, noise, or other human-caused disturbance. Any direct adverse effects would generally be short term, ending when or shortly after suppression actions are concluded. However, surface-disturbing operations conducted during fire suppression would result in a reduction or loss in quantity and quality of cover and forage habitat in both the grassland and sagebrush habitats. These activities would reduce forage availability, damage or destroy burrows or colonies, and remove the sagebrush and shrubs that provide above-ground vegetation cover. Despite the immediate initial loss of forage and shrub cover, some suppression tactics (e.g., backburning operations) or emergency restoration actions would actually stimulate vigorous regrowth of forb species in the following growing seasons. This regrowth would

benefit fish and wildlife species through improved forage quality and quantity as well as through greater visibility for detecting predators.

A large fire event and associated suppression activities could result in the deposition of large amounts of sediment and ash into local river systems. Aquatic species could experience water quality degradation for a short-term period. However, no long-term adverse impacts to the river system would be anticipated. Any fire retardant inadvertently deposited into the river system would likely dissipate and therefore not affect any aquatic species. Because prescribed fire-related actions tend to be limited in scope and smaller than major wildfires, no long-term impacts would be expected.

Fire management activities could adversely affect fish and wildlife species by trampling individuals or habitat. Fire suppression activities also have the potential to result in increased erosion. The construction of fire lines by using hand tools and heavy machinery, and the fire itself, could result in direct disturbance to individuals or the alteration of habitat. In addition, the presence of invasive weeds could result in fires burning in areas in which they did not previously burn.

Under Alternative N, prescribed fires and other treatment methods would be used to reduce hazardous fuels, with no acreage limitation established. Prescribed fire management activities, including fire-line construction and use of staging areas, could adversely affect fish and wildlife species by trampling individuals, crushing burrows, or altering habitat, as previously described. However, habitat manipulations resulting from the use of fire would also benefit species over the long term, through improved vegetative conditions.

Alternative N would include stabilization and rehabilitation efforts as needed for every wildland fire. Stabilization and rehabilitation efforts would benefit fish and wildlife species over the long term by decreasing erosion and restoring or improving habitat conditions following a fire event, although there could be short-term adverse impacts. The planting of non-native species that could out-compete native plant species used by wildlife species would alter habitat conditions and make them less favorable. The use of heavy equipment could result in the direct mortality of individuals and segmentation of populations. Increased human activity during construction efforts could cause bird species to alter foraging, nesting, and roosting behaviors.

Hazardous fuels reduction treatments would be allowed under Alternative N, with no acreage or treatment limitations prescribed. Depending on the timing, location, and project size, treatments could have adverse or beneficial impacts on wildlife habitat; these impacts would be determined by site-specific environmental analysis. For example, in mule deer summer range, reducing the pinyon-juniper component would promote favorable forage conditions. Conversely, reducing sagebrush habitat that provides cover and forage for the Greater sage-grouse would reduce forage availability and canopy cover, rendering the sage-grouse vulnerable to predation.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under Alternative N, resulting in no additional protection for fish and wildlife.

Impacts from Forestry and Woodland Products

Forestry and woodland management actions would include the harvesting of firewood, poles, Christmas trees, pine nuts, timber, and seed collection. Commercial forestry activities (e.g., timber harvests and sales) would be restricted to upland forests. These activities could include the use of heavy equipment, helicopters, chemical applications, road construction, and culvert installation, and typically would result in increased traffic, noise, and human presence.

The implementation of forestry management actions that reduce pinyon-juniper woodland invasion would benefit those species that require open space. The clearing of old, dense, relatively less-productive woodlands could open up more productive areas that could be used by wildlife species.

Potential adverse impacts to bird species could include loss of habitat, increased human access to remote habitats because of new road construction, increased noise, increased human activity, overspray or drift of chemical treatments, and culvert installation or waterbar construction, all of which could alter riparian function. These activities could result in habitat loss or fragmentation, displacement of individuals, reduction in prey base, or direct mortality of individuals. Human activities associated with forestry and woodland actions could increase noise and visual stimulants in habitats, thereby disrupting nesting and foraging behaviors and possibly resulting in the species leaving the area or abandoning nests. These activities could also lead to individual nest failure and reduced reproductive success. A significant alteration of habitat could render suitable habitat uninhabitable for wildlife species.

Impacts from Livestock Grazing

The effects of livestock grazing on wildlife could include direct competition for forage, water, and space and indirect habitat alteration through range improvements. The impacts of livestock grazing management on stream processes and fish habitats include the short-term and site-specific loss of stabilizing riparian vegetation, which could lead to stream instability and an associated loss of habitat complexity; the loss of shading vegetation, which could lead to elevated stream temperatures and increased sediment delivery; and the loss of stream channel complexity provided by fluvial process and woody debris. These impacts could vary depending on livestock grazing intensity, site characteristics, and species habitat requirements. Improving livestock grazing allotments to meet the *Fundamentals of Rangeland Health* and *Standards and Guidelines for Grazing Administration* would enhance fish and wildlife habitat in the long term by increasing the amount of desirable vegetation cover, structure, and species diversity, thereby improving water quality, aquatic species habitat, and wildlife species diversity. Meeting the Utah SRH would also result in some benefits to migratory birds and their habitat because of the SRH prescriptions for improving rangeland and riparian conditions.

The ability to adjust livestock numbers because of unforeseen conditions such as drought also would benefit wildlife species. During drought conditions, competition between livestock and wildlife is high, and undesirable vegetation is consumed. Livestock numbers that might have a beneficial effect or no effect to wildlife in wet years could have detrimental effects during drought conditions.

Domestic sheep can transmit diseases to bighorn sheep. Under Alternative N, domestic sheep grazing could continue in bighorn sheep habitat, thereby having potentially adverse effects on wildlife.

Impacts from Recreation

Any form of recreational activity that increases noise and dust could adversely impact fish and wildlife resources by disturbing breeding, feeding, or sheltering activities. Wildlife resources could be impacted by disturbance associated with commercial recreation or competitive events, depending upon the nature, location, and duration of the action. Some wildlife might be injured or killed as a result of such activities. Vehicular events, particularly those held during the time of year when species are rearing young, would have the greatest potential to affect wildlife. Animals could be injured or killed by collisions with vehicles on designated routes. Disturbance could lead to emigration or an increased risk of predation. Although Alternative N would include provisions to alter recreational activities that affect sensitive areas or species, such provisions would not be enforced until after monitoring had detected the impacts.

Foot traffic through sensitive areas could disturb, injure, or kill wildlife or prevent successful feeding or breeding activities. Recreational shooting activities might increase noise and trash in a localized area and could lead to injury or death of animals. Camping might cause minor-to-moderate impacts to wildlife

resources by disturbing animals, altering or removing habitat, increasing trash and debris in the area, and increasing the risk of wildfire. Animals might ingest foreign food substances that could cause illness or death. Camping activities in which pets are allowed to roam freely might also cause impacts to wildlife. Use restrictions on these types of activities should reduce or eliminate adverse effects to wildlife.

Recreationists often use riparian areas because of the presence of shade, water, aesthetic values, and opportunities for camping, fishing, boating, swimming, and other activities. Impacts to these habitats could be detrimental to riparian obligate species (such as migratory birds), by altering foraging, nesting, and mating behaviors. Extended recreational use in riparian areas could also result in sedimentation and compaction of soils, which could alter viable habitat for fish and other aquatic species.

Visitor use is expected to increase throughout the RFO. Under Alternative N, the entire RFO (with the exception of Yuba Reservoir, which is managed by the Fillmore FO) would be identified and managed as an ERMA. Management of recreation in ERMAs is restricted to custodial actions only, with no special prescriptions identified. OHV use in particular could lead to inadvertent damage to wildlife species and their habitat because of ease of access across a large portion of the RFO. Increasing recreational uses could also have adverse impacts on migratory birds, displacing birds and degrading habitat, particularly in riparian areas.

SRPs are issued to control visitor use and protect resources. Stipulations for protecting wildlife resources (e.g., limiting camping near springs, protecting raptors or nests from rock climbing activities) could be included in SRPs, which would mitigate impacts to species and habitat.

Impacts from Travel Management

OHV use within wildlife habitat areas could adversely impact wildlife by harassing and displacing animals and damaging vegetation. OHV recreation use on big game crucial winter range could lead to loss or alteration of habitat and forage and could cause displacement and physiological stress during the winter. If the disturbance were to become chronic or continuous, these impacts could result in reduced animal fitness and reproductive potential (Geist 1978). Unregulated OHV use in sagebrush habitat could be detrimental to Greater sage-grouse populations. Although some birds might be able to adjust by using adjacent sagebrush habitats, sage-grouse hens show fidelity for nesting in the same general area (WGFD 2003). Limiting OHV recreation use to designated routes in sage-grouse breeding and nesting habitat would localize impacts. However, impacts associated with human presence and noise from OHVs would result in displacement or harassment during sensitive lifecycles and could also result in nest abandonment. In addition to sage-grouse, other sagebrush obligate species would be impacted by human presence, noise from OHVs, and habitat degradation.

Cross-country OHV recreation in open areas could result in modification of forage composition and habitat. This change in composition and structure could result in displacement of wildlife. This activity could impact raptor and Greater sage-grouse nesting sites, sage-grouse leks and brood rearing areas, big game fawning and calving areas, and all crucial winter habitats. Unrestricted OHV use could also impact migratory birds by causing harassment, direct mortality, nest abandonment, and habitat alteration. In addition, cross-country OHV recreation use could alter the landscape, resulting in indirect impacts such as increased erosion, siltation, sediment loading, and introduction of invasive species into riparian and aquatic habitats.

Designating areas as limited to designated roads or limited seasonally would provide greater protection for fish and wildlife and associated habitat than would designating open areas. Designated routes would minimize alteration and destruction that cross-country OHV use could cause to habitat components. Designating areas as closed to OHV recreation use would further reduce surface disturbance and habitat modification. This management action would remove potential impacts to fish and wildlife and associated

habitat by limiting alteration to habitat components and disturbance associated with OHV use and human presence.

Proposed decisions to designate areas as open, closed, or limited to OHV use could have impacts on migratory birds and their habitats as well. In areas open to cross-country travel, migratory birds could be adversely impacted by habitat alteration, habitat fragmentation, and direct mortality from vehicle use. Adverse impacts would be less in areas in which vehicles were limited to designated routes. Closed areas, in which vehicle use is prohibited, would protect migratory birds and their habitats from vehicle disturbance. Under Alternative N, 1,636,400 acres would continue to be open to cross-country OHV use. As stated previously, continued OHV use would result in adverse impacts to fish and wildlife species. It is anticipated that OHV use will continue to increase in the future. As a result, adverse impacts to fish and wildlife in the RFO would also increase.

Proposed decisions to designate existing routes open to vehicle use, particularly routes in riparian areas, could adversely impact migratory birds because of habitat degradation and fragmentation caused by the routes and because of direct mortality caused by vehicle use. Conversely, proposed decisions to close routes would benefit birds and habitat by reducing degradation, fragmentation, and direct mortality. Proposed decisions to close routes seasonally, primarily to protect wildlife species such as deer, elk, bison, and Greater sage-grouse, would benefit migratory birds to the extent that closures overlapped with bird breeding seasons. Under Alternative N, there would be 4,315 miles of routes available for motorized use and 65 miles of routes that would be closed. In addition, this alternative would continue to seasonally close routes in crucial bison habitat at Swap Mesa and Cave Flat from December 20 through March 20, thus limiting disturbance to all wildlife species in these areas during that time period. Alternative N does not take into account crucial or high-value wildlife habitats when considering OHV route designations because these designations are based on location of existing routes. Therefore, wildlife species could be adversely impacted overall by OHV use under this alternative.

Continuing to manage the existing Piute and Great Western Trail systems would limit effects on migratory birds and habitat to existing disturbed areas (trails). Impacts of new additions to the trail systems would be addressed by site-specific analysis.

Impacts from Lands and Realty

Land Tenure Adjustments

The effects of land tenure adjustments on fish and wildlife species would be determined through site-specific environmental analysis for any proposed land disposal. Land disposals could result in losses of wildlife habitat, whereas acquisitions could result in gains of habitat. Acquisition of habitat would benefit fish and wildlife species by providing protections that would not be afforded by non-federal ownership.

Withdrawals

Alternative N would recommend the four existing ACECs (14,780 acres) for mineral withdrawal in addition to the existing withdrawals (154,700 acres). Withdrawing these areas from mineral entry would reduce any adverse effects to fish and wildlife that could result from mineral development in these areas.

Rights-of-Way and Other Land Use Authorizations

Construction of ROWs or other land use authorizations (e.g., permits, leases, easements) could cause direct impacts to habitat through trampling and other surface disturbance. Other indirect impacts could include changes in hydrology or degradation of habitat that could be the result of increased sedimentation or habitat fragmentation. ROWs could also degrade habitat through the introduction of invasive weeds.

Surface disturbances associated with ROWs and other land use authorizations could cause habitat loss or changes in vegetation structure, which could alter bird breeding and migratory habitats at or near disturbance locations. In addition, the construction, operation, and maintenance of ROWs could increase noise and human presence in otherwise remote areas and could increase stress levels. Increased human presence could disturb bird foraging, nesting behavior, and prey abundance. The disturbance of individuals could result in reduced productivity or nesting success and increased likelihood of individual mortality.

Activities associated with ROW development (e.g., blading and grading of vegetation for construction of ROWs) could produce open areas that create ideal habitat for some wildlife species. Blading and grading of habitat could also be beneficial to these species by decreasing the vegetation height and therefore increasing visibility around existing colonies. When these disturbed areas were successfully reclaimed, the regrowth of native vegetation would provide ideal forage.

Construction and operation of roadway systems increase both traffic and visitation to otherwise remote areas. Increases in traffic and human presence could lead to increased mortality of wildlife species from vehicle collisions as well as from poaching (Laun 1957; Johnson and Collinge 2004).

ROW construction activities could result in short-term impacts to other wildlife species as well, including damage to burrows, temporary displacement, loss of forage, and direct mortality. Long-term impacts could include loss of habitat and disturbance from increased human presence, noise, and vehicular traffic on roadways.

Any new land use authorizations (e.g., ROWs, permits, leases, easements) would require NEPA review, which would minimize impacts to fish and wildlife species. Under Alternative N, all ACECs (14,780 acres), eligible WSR corridors (12 segments—135 miles), areas closed to leasing (459,700 acres), and areas open to leasing subject to major constraints (NSO) (22,600 acres) would be managed as ROW avoidance areas. Exceptions would be granted only when the proposed authorization would not create substantial surface disturbance or would create only temporary impacts. Thus, impacts to fish and wildlife species in these avoidance areas would be negligible.

Wind and Solar Energy

The planning area has a low potential for development of wind and solar energy. Wind energy developments could potentially impact fish and wildlife species. Impacts to fish and wildlife species (including migratory birds) would include habitat disturbance, introduction of invasive weeds, individual mortality, erosion and runoff, fugitive dust, noise, exposure to contaminants, and interference with behavioral activities. Operational impacts of most concern to ecological resources would be those associated with bird and bat strikes to turbines and associated infrastructure (e.g., transmission lines, meteorological towers) and to a lesser extent, the electrocution of birds. Other concerns would include habitat fragmentation, noise, and disturbance caused by human and vehicle activity.

Alternative N would allow solar and wind energy exploration and development on a case-by-case basis. Any impacts to fish and wildlife species would depend upon the type of project proposed. For example, the use of solar panels could block plants from sunlight; the use of wind turbines could result in collisions with special status bird species.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Wildlife habitat areas that would be open or closed to leasing vary by species and by alternative (Table 4-16 through Table 4-20). Under all alternatives, as many as 454 oil and gas wells could be developed,

directly disturbing 3,080 acres. Sixty-three percent of the surface disturbance would be in the Sevier Frontal Zone Play (USGS Play-1907), which contains elk and mule deer habitat. The effects of oil and gas leasing would depend on the location and degree of disturbance, the proximity to crucial habitats, and the need to develop roads. However, under the Proposed RMP, exceptions, waivers, and modifications to seasonal restrictions would in some cases allow development activities to occur in occur in crucial habitat (Appendix 11). Human impacts associated with minerals exploration and associated development would include habitat and forage losses or alterations. Indirect impacts to big game could include displacement and physiological stress caused by human presence and activity during the winter (Bromley 1985). The impacts described previously would not occur in areas that were closed to leasing and would be minimal in areas that were open to leasing subject to major constraints (NSO).

Table 4-16. Oil and Gas Lease Stipulations in Bighorn Sheep Habitat

			Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Open	Standard Terms & Conditions	Acres	98,800	8,700	0	3,400	1,100
		% habitat	44%	4%	0%	1%	<1%
	Moderate Constraints (TL, CSU)	Acres	30,300	121,200	86,700	71,700	5,500
		% habitat	13%	53%	38%	32%	2%
	Major Constraints (NSO)	Acres	300	0	43,200	23,200	6,900
		% habitat	< 1%	0%	19%	10%	3%
Closed		Acres	97,900	97,400	97,500	129,000	213,800
		% habitat	43%	43%	43%	57%	94%

Table 4-17. Oil and Gas Lease Stipulations in Bison Habitat

			Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Open	Standard Terms & Conditions	Acres	89,400	200	0 ac	0 ac	0
		% habitat	36%	<1%	0%	0%	0%
	Moderate Constraints (TL, CSU)	Acres	44,600	134,300	120,000	84,400 ac	30,500
		% habitat	18%	54%	46%	34%	12%
	Major Constraints (NSO)	Acres	500	0	16,000	15,800 ac	4,700
		% habitat	<1%	0%	6%	6%	2%
Closed		Acres	116,400	116,400	122,600	150,700	215,700
		% habitat	46%	46%	47%	60%	86%

Table 4-18. Oil and Gas Lease Stipulations in Elk Habitat

			Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Open	Standard Terms & Conditions	Acres	82,300	100	0	100	100
		% habitat	39%	<1%	0%	<1%	<1%
	Moderate Constraints (TL, CSU)	Acres	124,900	212,100	263,900	201,000	172,700
		% habitat	59%	100%	99%	95%	81%
	Major Constraints (NSO)	Acres	4,900	0	2,500	10,500	10,500
		% habitat	2%	0%	1%	5%	5%
Closed		Acres	100	0	450	600	28,900
		% habitat	<1%	0%	<1%	<1%	14%

Table 4-19. Oil and Gas Stipulations in Mule Deer Habitat

			Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Open	Standard Terms & Conditions	Acres	225,400	400	0	100	100
		% habitat	40%	<1%	0%	<1%	<1%
	Moderate Constraints (TL, CSU)	Acres	243,800	477,300	689,400	412,800	300,000
		% habitat	43%	84%	87%	73%	53%
	Major Constraints (NSO)	Acres	8,500	0	36,500	31,200	15,500
		% habitat	1%	0%	5%	5%	3%
Closed		Acres	91,500	91,500	68,600	125,100	253,600
		% habitat	16%	16%	9%	22%	44%

Table 4-20. Oil and Gas Stipulations in Pronghorn Antelope Habitat

			Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Open	Standard Terms & Conditions	Acres	23,600	0	0	0	0
		% habitat	23%	0%	0%	0%	0%
	Moderate Constraints (TL, CSU)	Acres	73,300	102,700	204,000	102,700	102,700
		% habitat	71%	100%	98%	100%	100%
	Major Constraints (NSO)	Acres	5,300	0	4,700	0	0
		% habitat	5%	0%	2%	0%	0%

		Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Closed	Acres	500	0	0	0	0
	% habitat	1%	0%	0%	0%	0%

Leasable Minerals—Coal

The effects of coal resource development and production vary, depending on the location and degree of disturbance, the proximity to crucial habitats, and the need to develop roads that would cause surface disturbance. Surface mining of coal would impact crucial bison and mule deer habitat by disturbing surfaces and removing existing vegetation. Coal resource production sites often create areas of disturbed soil, providing areas for noxious weed infestations. However, this disturbance could convert vegetation to early seral stages, creating habitat for some wildlife species but reducing habitat for wildlife with mid-to-late seral habitat requirements. Seasonal restrictions on coal resource development would minimize stress to wildlife by limiting construction and other activities that could be disruptive to raptor nest sites, Greater sage-grouse leks, and wintering, calving, and lambing wildlife habitats. Migration/transition ranges and winter concentration areas for raptors could require intensive management to prevent the loss of habitat or to reduce stress. In any case, impacts to wildlife as a result of coal development would be addressed by site-specific environmental analysis.

Geophysical

Under Alternative N, BLM would allow geophysical explorations outside of WSAs and existing ACECs. Geophysical exploration would involve the use of OHVs and vehicles to lay geophones, to drill shot holes for charges, or to create a sound wave using all-terrain “thumper" vehicles instead of using charges. Vehicles also would be used to remove the geophones and reclaim the shot holes (if used). Exploration for oil and gas (including coalbed natural gas) might also include the drilling of one or more wells to test for the reservoir and its productive viability. During the exploration phase of drilling, surface-disturbing activities would include the construction of roads, well pads, reserve pits, and other facilities. Adverse impacts (including disturbance to reproductive and foraging activities, damage to habitat from use of vehicles, and direct mortality of individual animals) to wildlife species might result from surface-disturbing geophysical activities.

Locatable Minerals

The effects of locatable mineral resource development and production on wildlife could vary, depending on the location and degree of disturbance, the proximity to habitats, and the need to develop roads and other support facilities. Environmental contaminants associated with mining activities could affect wildlife species in many ways and at many levels within the ecosystem. Some contaminants (e.g., lead, arsenic, cyanide) associated with mines could cause acute or chronic effects on resident wildlife. Site-specific impacts to wildlife would be addressed in individual mining plans of operation. Under Alternative N, 169,480 acres would continue to be withdrawn from mineral entry. Closing or withdrawing areas from mineral operations would prevent impacts that these types of activities could cause to fish and wildlife species.

Salable Minerals

Alternative N would allow sale of mineral materials (salable minerals) on 1,668,300 acres (78% of the RFO). Existing areas of salable mineral disposals have already been substantially impacted, so it is likely that additional impacts to fish and wildlife species would be minimal in these areas. New sites would

involve only small areas of land and would be subject to NEPA review. Effects on wildlife would be addressed on a case-by-case basis before sales were permitted.

Impacts from Special Designations

Wilderness Study Areas

Wilderness is important to the conservation of wildlife species that are prone to conflict with humans and vulnerable to human-caused mortality. Wilderness-dependent wildlife species are those vulnerable to human influence, whose continued existence is dependent on and reflective of wild, extensive, undisturbed habitat. Continued management of WSAs under the IMP would limit surface-disturbing actions that could adversely affect wildlife species. WSAs are closed to leasing, precluding any impact from oil and gas development on wildlife species within these areas, and are managed as VRM Class I, further restricting surface-disturbing activities. Species within the RFO that inhabit WSAs and benefit from the isolation and lack of disturbance afforded by these areas include bison and desert bighorn sheep.

Direction for managing wildlife in WSAs is prescribed by the IMP. The IMP allows the following: 1) stocking of native fish and wildlife species within their historical ranges, or exotics that were being stocked before October 21, 1976; and 2) introductions of threatened, endangered, or other SSS native to North America within their historical ranges. Permanent installations could be permitted, to maintain or improve conditions for wildlife and fish, if the benefiting native species enhance wilderness values. All proposed actions would need to be scrutinized to determine whether the action would be necessary to protect the physical, biological, and cultural resources, as well as the quality of the wilderness experience.

Wild and Scenic Rivers

Under Alternative N, the outstandingly remarkable values, tentative classification, and free-flowing nature of all eligible WSR segments would be protected. Fish and wildlife species would benefit from continuing these protections (which would protect riparian values) because no surface-disturbing activities would be allowed within the portions of their habitat located within these areas.

Areas of Critical Environmental Concern

The existing four ACECs would continue to be designated and managed to protect their relevant and important values under Alternative N. Management actions that restrict surface disturbances in North Caineville Mesa ACEC, South Caineville Mesa ACEC, and Gilbert Badlands ACEC would maintain existing forage and habitat composition and structure. In addition, protecting relict vegetation values in the North Caineville Mesa and South Caineville Mesa ACECs would indirectly maintain important areas for potential bird habitat. Managing Beaver Wash ACEC to protect the cold desert riparian ecosystem would protect important areas for wildlife feeding, breeding, and sheltering. This could result in a high degree of plant diversity along the riparian corridors, providing increased quality and quantity of forage for wildlife species.

Alternative A

Impacts from Soil Resources and Water Resources

Impacts would be similar to those under Alternative N. However, under Alternative A, soil and water resources would be managed to avoid surface-disturbing activities within 330 feet of streams, reducing or eliminating impacts to fish and wildlife species in these buffer zones. Thus, the area of protection from surface-disturbing activities would be reduced, compared to Alternative N.

Impacts from Vegetation

Vegetation Treatments

The types of impacts under Alternative A would be similar to those described under Alternative N. Vegetation treatments would be allowed under all alternatives, but the allowed methods would vary under each alternative. Large-scale vegetation management projects, such as sagebrush harrowing or juniper chaining, could impact fish and wildlife (or their habitats) in the sagebrush-steppe and pinyon-juniper woodlands vegetation type areas in which such treatments would be conducted. No vegetation treatments are proposed in the non-vegetated and desert shrub vegetation type areas.

Under Alternative A, an average of 73,600 acres of vegetation could be treated annually by using fire, mechanical, biological, manual, or chemical means. Depending on the timing, location, and project size, treatments could have adverse or beneficial impacts on wildlife habitat. These impacts would be determined by site-specific environmental analysis. For example, in mule deer summer range, reducing the pinyon-juniper component would promote favorable forage conditions. Conversely, reducing sagebrush habitat that provides cover and forage for the Greater sage-grouse would reduce forage availability and canopy cover, rendering the sage-grouse vulnerable to predation.

Management Activities in Riparian and Wetland Areas

Restoring riparian areas that are non-functioning or functioning at risk would improve the habitat quality or quantity for fish and wildlife species, by increasing vegetation species diversity, structure, and improving water quality. Soil, water, and riparian resources would be managed to achieve proper functioning condition, to avoid surface-disturbing activities within riparian and wetland habitat, and to provide buffer zones within 330 feet of streams, reducing or eliminating impacts to fish and wildlife species. In addition, goals to maintain or restore soil productivity, minimize accelerated soil erosion, and prevent flood or sediment damage would maintain or improve riparian-wetland habitat and water quality for fish and wildlife species. Closing and rehabilitating roads would have beneficial impacts to wildlife by reducing the potential for harassment and by providing additional habitat.

Invasive Species Management

The types of impacts experienced as a result of noxious weeds and invasive species management would be similar to those described under Alternative N. However, implementation of Alternative A would likely result in additional acres being managed for invasive and noxious weed control, compared with Alternative N. As a result, potential adverse short-term impacts to fish and wildlife could increase because of the additional areas to be treated. However, potential long-term benefits would also be greater as a result of weed control methods that would improve forage and habitat for fish and wildlife species. Habitat would also be improved by the removal of invasive and noxious weeds that compete for available space and resources.

Insect Pest Management

Impacts would be the same as those described under Alternative N.

Impacts from Visual Resources

The types of impacts experienced under Alternative A would be similar to those described under Alternative N, except that 446,900 acres (21% of the lands managed by the RFO) would be designated as VRM Class I under Alternative A. Fish and wildlife species whose habitat overlaps with these areas would benefit because VRM Class I areas (which require preservation of the existing landscape) would restrict surface-disturbing activities.

Under Alternative A, none of the lands managed by the RFO would be designated as VRM Class II; 392,800 acres (18%) would be designated as VRM Class III; and 1,288,300 acres (61%) would be managed as VRM Class IV. Areas designated as VRM Class III or IV (79% of the RFO under this alternative) would be subject to actions that allow for greater landscape modification and therefore greater surface disturbance. These areas could be subject to such actions as complete vegetation removal, which would drastically alter (at least in the short term) fish and wildlife habitat. Alternative A would designate more acres as VRM Class III or IV than would any of the other alternatives.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative N except that stipulations imposed under Alternative A to protect Greater sage-grouse habitat would be less restrictive than those under Alternative N. Therefore, benefits to other wildlife species located in sage-grouse habitat would be less under Alternative A than Alternative N.

Impacts from Fish and Wildlife

Impacts would be similar to those described under Alternative N, except that mitigation could be required in deer and elk habitats from December 15 through April 15 and in crucial desert bighorn habitat from April 15 through June 15. Implementation of these mitigation measures could also benefit other wildlife species located in these areas.

Impacts from Wild Horses and Burros

Impacts would be the same as those described under Alternative N.

Impacts from Fire and Fuels Management

The types of impacts experienced under Alternative A would be similar to those described under Alternative N, except that under Alternative A, maximum treatment acreage limits would be set (averaging 73,600 annually). Prescribed fires and wildland fires could adversely affect fish and wildlife species in the short term (for the reasons described under Alternative N). However, habitat manipulations through the use of fire could benefit fish and wildlife species over the long term, through improved vegetative conditions.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under this alternative, resulting in no additional protection for fish and wildlife.

Impacts from Forestry and Woodland Products

The types of impacts experienced as a result of forest and woodland products harvesting would be similar to those described under Alternative N, except that commercial and non-commercial harvesting would be allowed throughout the RFO (with the exception of WSAs) under Alternative A. Thus, impacts to wildlife species from this type of activity would occur over a larger area.

Impacts from Livestock Grazing

Impacts would be similar to those described under Alternative N, except that 36,950 more acres would be available for grazing under Alternative A. Thus, impacts to fish and wildlife could occur over a larger area. However, because livestock grazing would be managed to meet the *Fundamentals of Rangeland Health* and *Standards and Guidelines for Grazing Administration*, impacts to fish and wildlife should not be significant. Modifying and improving livestock grazing management to meet these Standards and Guidelines would improve rangeland conditions that could also benefit wildlife habitat.

Impacts from Recreation

The establishment of and management associated with SRMAs would provide for management at popular recreation use areas. Management of these areas under Alternative A would decrease the potential for inadvertent damage of fish and wildlife species and their habitat, as compared to management under Alternative N.

Under Alternative A, five SRMAs (514,500 acres) would be established to manage recreational use and to mitigate impacts caused by this use, such as uncontrolled camping, parking, and other activities. This management would decrease the potential for impacts to fish and wildlife species. These impacts could include trampling, erosion, destruction of habitat, and the direct mortality of individual animals. Limiting OHV use in the Otter Creek Reservoir SRMA to designated routes would limit the extent of potential impacts.

The construction of recreation facilities in the Big Rock SRMA and the Sahara Sands SRMA would focus recreation use, minimizing impacts. Managing the Dirty Devil/Robbers Roost SRMA (290,000 acres) for primitive and semi-primitive recreation would reduce the potential for impacts to wildlife by limiting OHV recreation use to designated routes. Managing the Factory Butte SRMA (199,700 acres) for a motorized recreational opportunity and allowing moderate-to-extensive landscape modification could have major impacts and would result in continued impacts to wildlife. However, this area is receiving heavy motorized use currently.

Alternative A allows vehicles to pull off of designated routes (outside WSAs) as much as 100 feet to either side of centerline (for parking/staging) and as much as 300 feet to either side of centerline (for camping). This allowance could result in vehicles generally impacting wildlife species and their habitat in these areas.

Impacts from Travel Management

The types of impacts experienced as a result of travel management would be similar to those described under Alternative N, except that implementation of Alternative A would result in 449,000 acres that are open to OHV use. OHV use has the potential to lead to direct mortality of individual animals as well as disruption of reproductive and foraging activities. The increasing use of OHVs on BLM land could also transport noxious and invasive weed seeds from infested areas to uninfested areas. Surface disturbance associated with OHV use (e.g., crushing of vegetation, soil disturbance) could increase the susceptibility of native plant communities to weed establishment and could modify soil conditions so that soils are unsuitable for establishment by native species.

Areas that would be closed to OHV use or in which OHV use would be restricted to designated routes would be protected from the surface-disturbing activities associated with OHV use. Alternative A, which would designate no areas as closed to OHV use and 1,679,000 acres as limited, would provide more protection to fish and wildlife species than would Alternative N because substantially fewer areas would be open to OHV use under Alternative A.

Alternative A proposes to limit OHV use to designated routes in crucial bison habitat and in Greater sage-grouse leks and nesting habitats. This designation would also benefit other wildlife species (including migratory birds) to the extent that these restricted areas overlap with bird breeding habitats. Proposed decisions for allowing motorized access to campsites adjacent to designated routes could impact migratory birds and their habitats. Disturbance of birds and alteration of habitat could be caused by campers, particularly in riparian areas that are often important bird habitat as well as desirable places to camp.

Impacts from Lands and Realty

Land Tenure Adjustments

Impacts would be the same as those described under Alternative N.

Withdrawals

The types of impacts experienced as a result of withdrawals would be similar to those described under Alternative N, except that fewer acres (154,700 acres) would be withdrawn from mineral entry under Alternative A. Thus, impacts to fish and wildlife species from mining-related surface-disturbing activities could be greater under this alternative.

Rights-of-Way and Other Land Use Authorizations

The types of impacts experienced as a result of ROWs and other land use authorizations would be similar to those described under Alternative N, except that Alternative A would propose fewer ROW avoidance areas. Thus, impacts to fish and wildlife species from construction, operation, and maintenance of ROWs and other land use authorizations could be greater under Alternative A than under Alternative N.

Wind and Solar Energy

Implementation of Alternative A would allow wind and solar energy exploration and development throughout the RFO, except for in WSAs and VRM Class I areas. The restriction of wind and solar energy exploration and development within WSAs and VRM Class I areas could indirectly benefit fish and wildlife species by eliminating surface-disturbing activities within these areas.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Under Alternative A, 57% of bighorn sheep habitat, 54% of bison habitat, 100% of elk habitat, 84% of mule deer habitat and 100% of pronghorn antelope habitat would be within areas open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU) (Table 4-16 through Table 4-20). Consequently, these species would experience impacts from oil and gas development (particularly elk, mule deer, and pronghorn antelope because the majority of their habitat would be in these lease categories). Impacts would be the greatest under Alternative A. Other wildlife that occur within areas that are open to leasing subject to the standard terms and conditions or open to leasing standard to moderate constraints (TL, CSU) would also be adversely impacted by oil and gas development activities.

Leasable Minerals—Coal

Impacts would be the same as those described under Alternative N.

Geophysical

The type of impacts experienced as a result of geophysical exploration would be the same as those described under Alternative N, except that under Alternative A, geophysical explorations would be allowed throughout the RFO (with the exception of WSAs), as determined through site-specific NEPA analysis. Alternative A could therefore result in more potential impacts to fish and wildlife species than would Alternative N.

Locatable Minerals

The types of impacts experienced as a result of locatable minerals activities would be the same as those described under Alternative N. Under Alternative A, 154,700 acres would continue to be withdrawn from mineral entry. Closing or withdrawing areas from mineral operations would prevent impacts that these

types of activities could cause to fish and wildlife species. Alternative A would recommend the fewest acres for mineral withdrawal and therefore could result in the most potential impacts.

Salable Minerals

The type of impacts experienced from the disposal of salable minerals would be the same as those described under Alternative N. Alternative A would allow sale of mineral materials (salable minerals) on 1,681,100 acres (79% of the RFO). Existing areas of salable mineral disposals have already been substantially impacted, so it is likely that impacts to fish and wildlife species would be minimal in these areas. However, new sites would involve only small areas of land and would be subject to NEPA review. Effects on wildlife would be addressed on a case-by-case basis before sales were permitted.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Under Alternative A, no eligible rivers would be recommended or managed as suitable. The outstandingly remarkable values, tentative classification, and free-flowing nature of these river segments would not be protected. Thus, fish and wildlife species would not receive any additional benefit.

Areas of Critical Environmental Concern

Under Alternative A, no ACECs would be designated. No special management to protect relevant and important values would be provided to fish and wildlife species or their habitat.

Proposed RMP

Impacts from Soil Resources and Water Resources

Impacts would be the same as those described under Alternative N.

Impacts from Vegetation

Vegetation Treatments

Impacts would be the same as those described under Alternative A.

Management Activities in Riparian and Wetland Areas

Impacts would be the same as those described under Alternative A.

Invasive Species Management

Impacts would be the same as those described under Alternative A.

Insect Pest Management

The types of impacts experienced as a result of insect pest management would be similar to those described under Alternative N, except that implementation of the Proposed RMP would allow for pest control treatments when the area's economic threshold is exceeded. This action would likely be implemented only during large insect outbreaks, such as outbreaks of grasshoppers or Mormon crickets. The use of insecticides during large outbreaks could benefit wildlife species by reducing competition for available food. However, adverse impacts would also be realized in the form of decreased plant pollinators and reduced forage base.

Impacts from Visual Resources

The types of impacts experienced under the Proposed RMP would be similar to those described under Alternative A, except that more acres would be designated as VRM Classes I and II (655,900 acres, or 31% of the RFO), thereby protecting fish and wildlife species by restricting ground-disturbing activities in these areas.

Under the Proposed RMP, 393,100 acres (18%) would be designated as VRM Class III and 1,038,200 (49%) would be managed as VRM Class IV. These areas, which could allow for greater landscape modification and therefore greater surface disturbance, could be subject to such actions as complete vegetation removal, which would drastically alter (at least in the short term) the habitat for fish and wildlife. The Proposed RMP would designate more acres as VRM Classes III and IV than would Alternative C or D but fewer acres than would Alternative N or A.

Impacts from Special Status Species

Generally, impacts would be the same as those described under Alternative N. However, the Proposed RMP would allow NSO within ½ mile of Greater sage-grouse leks and would prohibit surface disturbing or otherwise disruptive activities within 2 miles of a lek from March 15 through July 15, and within sage-grouse winter habitat from December 15 through March 14 (see Appendix 11 for exceptions, waivers, and modifications). These stipulations would benefit other wildlife species that occur within the restricted areas. Therefore, wildlife benefits under the Proposed RMP would be greater than under Alternatives N or A, but less than Alternatives C and D.

Impacts from Fish and Wildlife

Proposed actions such as habitat manipulations and range developments could result in short-term, adverse impacts to fish and wildlife and could detrimentally influence their behavior. Short-term, adverse impacts could result from vegetation treatments that require the use of heavy equipment. Human disturbance and noise associated with the use of heavy equipment could temporarily disperse wildlife from occupied habitats. Adverse direct impacts could also result from accidental chemical drift from pesticide use in nearby areas. These activities have the potential to remove suitable habitat or other desired vegetation for wildlife species. Vegetation treatments would likely benefit wildlife species and their prey over the long term, by providing additional forage.

Implementation of the Proposed RMP would result in seasonal and spatial stipulations to protect desert bighorn sheep habitats during lambing and other sensitive times during their lifecycles. However, exceptions, waivers, or modifications could be granted on a case-by-case basis. Protective stipulations placed on crucial habitats would reduce adverse effects that surface-disturbing activities could cause to these species, as well as to other wildlife species that occupy the same areas.

Surface-disturbing activities could contribute to decreased air quality and increased soil erosion, soil compaction, introduction and spread of invasive and noxious weeds, crushing of plants, and habitat degradation. Restrictions or stipulations of surface-disturbing activities within wildlife habitats would also benefit other wildlife species that occur within the restricted areas. The Proposed RMP would prohibit surface-disturbing activities in deer and elk habitat from December 1 through April 15, and in crucial desert bighorn habitat from April 15 through June 15. Mitigation measures would be required for pronghorn antelope from May 15 through June 15. Implementation of these restrictions and stipulations would directly benefit other species by precluding surface-disturbing activities during reproductive periods, and would indirectly benefit wildlife located in these areas by limiting habitat disturbance.

Impacts from Wild Horses and Burros

The types of impacts experienced as a result of wild horse and burro management would be similar to those described under Alternative N, except that the Proposed RMP proposes to manage the Canyonlands HMA for 60–100 wild burros. New burros could be introduced to maintain genetic variability. Activities under the Proposed RMP, including the introduction and gathering of wild burros, could adversely affect wildlife species, as described under Alternative N.

Impacts from Fire and Fuels Management

The types of impacts experienced under the Proposed RMP would be similar to those described under Alternative N, except that the Proposed RMP would include stabilization efforts to sustain ecosystems, improve public health, improve safety, and help communities protect infrastructure. Priority would be given to areas that pose a threat to life and property and areas with a potential for invasive weeds. As previously discussed, stabilization efforts would have the potential to benefit fish and wildlife species through decreased erosion and improved habitat and vegetation conditions, but would also result in short-term impacts that would alter habitat.

Impacts from Non-WSA Lands with Wilderness Characteristics

Managing 78,600 acres of non-WSA lands with wilderness characteristics to maintain their wilderness characteristics would provide habitat for wildlife species vulnerable to human influence, whose continued existence is dependent on and reflective of wild, extensive, undisturbed habitat. Management actions for non-WSA lands with wilderness characteristics would reduce surface disturbance and habitat fragmentation. Species within the RFO that benefit from the isolation and lack of disturbance afforded by these areas include bison and desert bighorn sheep.

Impacts from Forestry and Woodland Products

The types of impacts experienced as a result of forest and woodland products harvesting would be similar to those described under Alternative N, except that commercial and non-commercial harvesting would be allowed throughout the RFO (with the exception of WSAs and the one suitable WSR corridor proposed under the Proposed RMP). Thus, impacts from this type of activity would occur over a larger area than under Alternative N but a smaller area than under Alternative A.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

The types of impacts experienced as a result of recreation management would be similar to those described under Alternative A, except that the Proposed RMP would establish five SRMAs (860,390 acres) to manage recreational use and to mitigate impacts caused by this use, such as uncontrolled camping, parking, and other activities. The Proposed RMP proposes only 24,400 acres at Factory Butte and 90 acres at Big Rocks as OHV SRMAs, decreasing the potential for impacts to wildlife, as compared to Alternative A.

The Proposed RMP would allow vehicles to pull off of designated routes (outside WSAs) as much as 50 feet to either side of the centerline (for parking/staging) and as much as 150 feet to either side of the centerline (for camping). Although this could result in vehicles impacting wildlife species, the area of potential impact would be localized and would be less than under either Alternative N or A.

Impacts from Travel Management

The types of impacts experienced as a result of travel management would be similar to those described under Alternative N, except that implementation of the Proposed RMP would result in 9,890 acres that are open to cross-country OHV use. OHV use could be more concentrated in this smaller area, and would likely have more adverse effects per acre. Impacts of OHV use on wildlife could involve habitat disturbance, as well as disturbance to individual animals during reproductive or foraging activities. The increasing use of OHVs on BLM land could also transport noxious and invasive weed seeds from infested areas to uninfested areas. Surface disturbance associated with OHV use (e.g., crushing of vegetation and soil disturbance) could increase the susceptibility of native plant communities to weed establishment and could modify soil conditions so that soils are unsuitable for establishment by native species.

Areas that are closed to OHV use or in which the use is restricted to designated routes would be protected from the surface-disturbing activities associated with OHV use. The Proposed RMP, which designates 209,900 acres as closed to OHV use and 1,908,210 acres as limited, would provide more protection to fish and wildlife species than would either Alternative N or A because substantially fewer areas are open to OHV use under the Proposed RMP.

Under the Proposed RMP, 4,277 miles of routes would be designated for use by the public, and 345 miles would be closed. The Proposed RMP designates routes to minimize harassment or significant disruption of wildlife. Limited or no access would reduce adverse effects that OHV use could cause to fish and wildlife species.

The Proposed RMP proposes the following travel restrictions in wildlife habitat areas: limit OHV use to designated routes on 806,700 acres and close 4,500 acres to OHV use within deer and elk crucial winter range; and limit OHV use to designated routes in crucial bison habitat and in all Greater sage-grouse habitats including breeding (leks), nesting, brood-rearing and wintering habitat. These limitations would also benefit other wildlife species (including migratory birds) to the extent that the restricted areas overlap with bird breeding habitat. Proposed decisions for allowing motorized access to campsites adjacent to designated routes could impact migratory birds and their habitats because of disturbance of birds and alteration of habitat by campers, particularly in riparian areas that are often important bird habitat and desirable places to camp.

Impacts from Lands and Realty

Land Tenure Adjustments

Impacts would be the same as those described under Alternative N.

Withdrawals

Implementation of the Proposed RMP would include recommending for mineral withdrawals two ACECs (2,530 acres), one suitable WSR segment (5 miles), and developed recreation sites. Withdrawing these areas from mineral entry would reduce any adverse impacts to fish and wildlife species that could result from mineral developments in these areas.

Rights-of-Way and Other Land Use Authorizations

The types of impacts experienced as a result of land use authorizations would be similar to those described under Alternative N, except that fewer ROW avoidance areas would be proposed under the Proposed RMP. Because site-specific NEPA review would be required, impacts to fish and wildlife species would be minimized or mitigated.

Wind and Solar Energy

Implementation of the Proposed RMP would result in the potential for wind and solar energy exploration and development in the majority of the RFO, with the exception of WSAs, ACECs, areas managed as open to leasing subject to major constraints (NSO) for oil and gas development, and VRM Class I or II areas. The restriction on wind and solar development within these areas would likely benefit bird species, including migratory species, by providing sites in which conflicts between birds and wind and solar facilities would be avoided.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Under the Proposed RMP, 38% of bighorn sheep habitat, 46% of bison habitat, 99% of elk habitat, 87% of mule deer habitat, and 98% of pronghorn antelope habitat would be within areas open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU) (Table 4-16 through Table 4-20). Consequently, these species (particularly elk, mule deer, and pronghorn antelope because the majority of their habitat would be in these lease categories) would experience impacts from oil and gas development. However, impacts would be slightly less than under Alternative N. Other wildlife that occur within areas that are open to leasing or open to leasing subject to moderate constraints (TL, CSU) would also be adversely impacted by oil and gas development activities.

Leasable Minerals—Coal

Impacts would be the same as those described under Alternative N.

Geophysical

The type of impacts experienced as a result of geophysical exploration would be the same as those described under Alternative N, except that under the Proposed RMP, geophysical explorations would be allowed throughout the RFO with the exception of WSAs, suitable WSR corridors (1 segment–5 miles), and ACECs (2,530 acres), as determined through site-specific NEPA analysis. The Proposed RMP therefore could result in more impacts to wildlife than would Alternative N, C, or D but fewer impacts than would Alternative A.

Locatable Minerals

The types of impacts experienced as a result of minerals and energy would be similar to those described under Alternative N. Under the Proposed RMP, 176,200 acres would be recommended for withdrawal from mineral entry. Closing or withdrawing areas from mineral operations would prevent impacts that these types of activities could cause to fish and wildlife species. The Proposed RMP would recommend fewer acres for mineral withdrawal than would Alternative C or D but more acres than would Alternative N or A.

Salable Minerals

The type of impacts experienced from the disposal of salable minerals would be the same as those described under Alternative N. The Proposed RMP allows sale of mineral materials (salable minerals) on 1,680,700 acres (79% of the RFO). However, new sites would involve only small areas of land and would be subject to NEPA review. Effects on wildlife would be addressed on a case-by-case basis before sales were permitted, and potential impacts would be mitigated.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Under the Proposed RMP, one river segment with a tentative classification of Wild (the Fremont River in Fremont Gorge—5 total miles) would be recommended as suitable for WSR designation. Managing this area as suitable for inclusion in the NWSRS would benefit species such as migratory birds that use these areas, by protecting riparian values and ecological condition. A lack of potential for surface-disturbing activities would also result in the protection of habitat used by the prey of wildlife species.

Areas of Critical Environmental Concern

Under the Proposed RMP, two ACECs would be designated: North Caineville Mesa (2,200 acres) and Old Woman Front RNA (330 acres). The ACECs would provide protection for fish and wildlife species, by restricting many surface-disturbing activities. Special management of these ACECs would include closing to OHV use, managing as ROW avoidance areas, managing oil and gas leasing as open with NSO, unavailable for livestock grazing, and closed to harvesting of woodland products (Old Woman Front) These management prescriptions to protect relevant and important values would also protect the fish and wildlife species that occur in the ACECs. However, the total acreage contained within these ACECs (2,530 acres) is nominal, so designation of these areas would provide little additional protection to wildlife.

Alternative C

Impacts for Soil Resources and Water Resources

Impacts would be similar to those under Alternative N. However, under Alternative C, soil and water resources would be managed to avoid surface-disturbing activities within 660 feet of streams, reducing or eliminating impacts to fish and wildlife species in these buffer zones. Thus, the area of protection from surface-disturbing activities would be increased, compared to Alternative N. Alternative C (along with Alternative D) would best protect habitat for riparian-obligate species, provide and protect clean water sources for big game, protect aquatic invertebrates, and protect and promote riparian vegetation, which would provide habitat for songbirds. Closing and rehabilitating roads would have beneficial impacts to wildlife, by reducing the potential for harassment and by providing additional habitat.

Impacts from Vegetation

Vegetation Treatments

Impacts would be similar to those described under Alternative N. Under Alternative C, an average of 26,000 acres annually could be treated by using only prescribed or wildland fire and biological treatments. Depending on the timing, location, and project size, treatments could have adverse or beneficial impacts on wildlife habitat, as determined by site-specific environmental analysis. For example, in mule deer summer range, reducing the pinyon-juniper component would promote favorable forage conditions. Conversely, reducing sagebrush habitat that provides cover and forage for the Greater sage-grouse would reduce forage availability and canopy cover, rendering the sage-grouse vulnerable to predation. The limitation on treatment methods under Alternative C could preclude effective vegetation management for wildlife in some areas.

Management Activities in Riparian and Wetland Areas

The types of impacts experienced as a result of riparian management would be similar to those described under Alternative N, except that the size of the buffer zone in which no surface disturbance would be allowed would be 660 feet to each side of the riparian area under Alternative C (compared with 500 feet under Alternative N). Thus, Alternative C would protect a larger area around the riparian/wetland zones from surface-disturbing activities. This larger area would protect habitat for riparian-obligate species,

provide and protect clean water sources for big game, protect aquatic invertebrates, and protect and promote riparian vegetation, which would provide habitat for songbirds.

Invasive Species Management

The types of impacts experienced as a result of noxious weeds and invasive species management would be similar to those described under Alternative N, except that implementation of Alternative C would initiate an attempt to control noxious and invasive weeds through treatment methods that mimic natural processes. Implementation of Alternative C could make control of some invasive species difficult because of lack of suitable substitute treatments possibly allowing the spread of invasive species and displacement of desirable vegetation (Hart 1999). For example, using fire as a control tool for species such as tamarisk could increase the growth and spread of non-native, fire-adapted species that have more efficient recovery mechanisms than most native species. This growth could have indirect adverse effects on fish and wildlife species because noxious and invasive weeds would likely expand their range and could alter suitable fish and wildlife habitat and reduce available forage. The short-term adverse effects resulting from surface-disturbing activities (and discussed under Alternative A) would not be realized. Beneficial impacts resulting from weed control treatments through natural processes within fish and wildlife habitat would be limited.

Insect Pest Management

The types of impacts experienced as a result of insect pest management would be similar to those described under Alternative N, except that implementation of Alternative C would result in no immediate beneficial or adverse impacts from pest control treatments. However, wildlife species could be affected if insect pests proliferate to the point of changing the landscape/habitat by removing large amounts of potential forage.

Impacts from Visual Resources

The types of impacts experienced under Alternative C would be similar to those described under the Proposed RMP. However, Alternative C would designate more acres as VRM Classes I and II (677,500 acres, or 32% of the RFO), thus protecting fish and wildlife species by restricting ground-disturbing activities in these areas.

Under Alternative C, 509,100 acres (24%) would be designated as VRM Class III and 941,400 (44%) would be managed as VRM Class IV. These areas, which would be subject to actions that allow for greater landscape modification and therefore greater surface disturbance, could be subject to such actions as complete vegetation removal, which would drastically alter (at least in the short-term) the habitat for fish and wildlife species. Alternative C would designate more acres as VRM Classes III and IV than would Alternative D but fewer acres than would Alternative N or A or the Proposed RMP.

Impacts from Special Status Species

Impacts would be similar as those described under the Proposed RMP. Although Alternative C does not include timing limitations on surface disturbing activities in sage grouse winter habitat, this habitat is mostly within crucial mule deer habitat which does have a timing limitation on such activities from December 15 through April 15.

Impacts from Fish and Wildlife

The types of impacts experienced as a result of fish and wildlife management would be similar to those described under the Proposed RMP, except that Alternative C would implement seasonal and spatial stipulations to protect desert bighorn sheep habitats during lambing and other sensitive times during their lifecycles. Stipulations placed on crucial habitat management would reduce adverse effects caused by

surface-disturbing activities that could harm those species, as well as other species that occur within the same area.

Restrictions or stipulations of surface-disturbing activities within wildlife habitats would also benefit other wildlife species that occur within the restricted areas. Alternative C prohibits surface-disturbing activities in deer and elk habitat from December 1 through April 15, in crucial desert bighorn habitat from April 15 through June 15, and in crucial pronghorn antelope habitat from May 15 through June 15. Implementation of these restrictions and stipulations would directly benefit other species by precluding surface-disturbing activities during reproductive periods, as well as indirectly benefiting wildlife located in these areas by limiting habitat disturbance.

Impacts from Wild Horses and Burros

The types of impacts experienced as a result of wild horse and burro management would be similar to those described under Alternative N, except that Alternative C proposes to manage the Canyonlands HMA for 120-200 wild burros. New burros could be introduced to maintain genetic variability. Activities under this alternative, including the introduction and gathering of wild burros, would have the potential to adversely affect wildlife species as described under Alternative N.

Impacts from Fire and Fuels Management

The types of impacts experienced under this alternative would be similar to those described for the Proposed RMP, except that under Alternative C the average annual treatment limits would be less (26,000 acres). As stated previously, prescribed fires and wildland fires have the potential to adversely affect wildlife species. However, habitat manipulations with the use of fire could benefit wildlife over the long-term through improved vegetative conditions. With less acres treated under this alternative, there would be less potential adverse impacts, but also less potential beneficial impacts from habitat manipulations.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under this alternative, resulting in no additional protection for fish and wildlife.

Impacts from Forestry and Woodland Products

The types of impacts experienced as a result of forest and woodland products harvesting would be similar to those described under Alternative N, except that commercial and non-commercial harvesting would be allowed throughout the RFO (with the exception of WSAs and suitable WSR corridors). Thus, impacts from this type of activity would occur over a smaller area than Alternatives A or the Proposed RMP. In addition, the rejuvenating benefits to habitats from the clearing of woodland areas would not be realized in the areas in which forest and woodland products harvesting is precluded.

Impacts from Livestock Grazing

Impacts would be similar to those described under Alternative N, except that this alternative prohibits a change in kind of livestock from cattle to domestic sheep within all identified bighorn sheep habitat. Because domestic sheep can transmit diseases to bighorn sheep, this would provide protections for bighorn sheep within the RFO from livestock.

Impacts from Recreation

The types of impacts experienced as a result of recreation management would be similar to those described under Alternative A, except that four SRMAs (930,000 acres) would be established to manage recreational use and to mitigate impacts caused by this use. No SRMAs would be established for OHV use under Alternative C, thereby decreasing the potential for impacts from this type of use to fish and wildlife species.

Managing the Dirty Devil/Robbers Roost SRMA (375,800 acres) for dispersed recreation in a primitive setting would indirectly reduce the potential for surface disturbance (and associated damage to fish and wildlife) caused by recreation. Managing the Henry Mountains SRMA (533,900 acres) for primitive and semi-primitive recreation and managing the Sevier Canyon SRMA (7,500 acres) for scenic values would indirectly maintain or reduce the potential for disturbance and impacts to fish and wildlife. Managing the Capitol Reef Gateway SRMA (12,800 acres) for a natural recreation experience and the development of facilities could have localized site-specific impacts, although NEPA review would be required prior to construction of any facilities.

Alternative C allows vehicles to pull off of designated routes (outside WSAs) as much as 25 feet to either side of the centerline (for parking/staging); camping would be allowed only in designated campsites, with travel between campsites allowed only on designated routes. Together, these restrictions would minimize disturbance to fish and wildlife species and would result in less disturbance than under Alternative N or A or the Proposed RMP.

Impacts from Travel Management

The types of impacts experienced as a result of travel management would be similar to those described under Alternative N, except that under Alternative C, no acres would be open to cross-country OHV use; 1,445,000 acres would be limited to designated routes; and 683,000 acres would be closed to OHV use. By eliminating areas that are open to unrestricted OHV use, adverse impacts to fish and wildlife species would be substantially reduced.

Under Alternative C, there would be 3,192 miles of designated routes and 1,188 miles of routes that would be closed. Alternative C designates routes to minimize harassment or significant disruption of wildlife. Limited or closed areas would reduce adverse effects that OHV use could have on fish and wildlife species.

Alternative C proposes the following travel restrictions in wildlife habitat areas: Within deer and elk crucial winter range, limit OHV use to designated routes on 509,000 acres and close 142,000 acres to OHV use; within crucial bison habitat, limit OHV use to designated routes on 62,000 acres and close 189,000 acres to OHV use; and limit OHV use to designated routes in all Greater sage-grouse habitats including breeding (leks), nesting, brood-rearing and wintering habitat. These restrictions would also benefit other wildlife species (including migratory birds), to the extent that the restricted areas overlap with bird breeding habitat. Proposed decisions for allowing motorized access to campsites adjacent to designated routes could impact migratory birds and their habitats because of disturbance of birds and alteration of habitat by campers, particularly in riparian areas that are often important bird habitat and desirable places to camp.

Impacts from Lands and Realty

Land Tenure Adjustments

Impacts would be the same as those described under Alternative N.

Withdrawals

Alternative C recommends withdrawing from mineral entry all or parts of several ACECs, suitable WSR corridors, and developed recreation sites (331,100 acres, or 16% of the RFO). Withdrawing these areas from mineral entry would reduce adverse impacts that mineral developments could have on fish and wildlife species in these areas.

Rights-of-Way and Other Land Use Authorizations

The types of impacts experienced as a result of land use authorizations would be similar to those described under Alternative N, except that more ROW avoidance areas are proposed under Alternative C (735,000 acres closed to leasing or open to leasing subject to major constraints (NSO), 12 suitable WSR segments, and 16 ACECs). Because NEPA review would be required prior to issuing any land use authorization, impacts to fish and wildlife species would be minimal.

Wind and Solar Energy

Alternative C specifically excludes SSS habitats from wind and solar energy developments. This exclusion would help to protect other wildlife species (including bats, migratory birds, and raptors) that occur in these areas from any surface-disturbing action that could result from these developments.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Under Alternative C, 33% of bighorn sheep habitat, 34% of bison habitat, 95% of elk habitat, 73% of mule deer habitat, and 100% of pronghorn antelope habitat are within areas open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU) (Table 4-16 through Table 4-20). Consequently, these species (particularly elk and pronghorn antelope because almost all of their habitat would be in these lease categories) would experience impacts from oil and gas development, although the impacts would be less than under Alternative N or A or the Proposed RMP. Other wildlife that occurs within areas that are open to leasing or open to leasing subject to moderate constraints (TL, CSU) could also be adversely impacted by oil and gas development activities.

Leasable Minerals—Coal

Impacts would be the same as those described under Alternative N.

Geophysical

The type of impacts experienced as a result of geophysical exploration would be the same as those described under Alternative N, except that under Alternative C, geophysical explorations would be allowed throughout the RFO, with the exception of WSAs, suitable WSR corridors (12 segments—135 miles), and ACECs (886,810 acres), as determined through site-specific NEPA analysis. Alternative C could result in more potential impacts to wildlife species than Alternative D but less impacts than Alternative N or A or the Proposed RMP.

Locatable Minerals

The types of impacts that would be experienced from locatable mineral activities would be the same as those described under Alternative N. Under Alternative C, the location, exploration, and development of locatable minerals could occur throughout the RFO, except in areas withdrawn from mineral entry (331,100 acres), including Lonesome Beaver Campground, McMillan Spring Campground, Starr Springs Campground, Dandelion Flat Picnic Area, Hog Springs Picnic Area, Otter Creek Reservoir Recreation Sites, Kingston Canyon Recreation Site, Koosharem Picnic Area, Dirty Devil ACEC, Fremont Gorge/Cockscomb ACEC, Badlands ACEC, Henry Mountains ACEC, Horseshoe Canyon ACEC, Little Rockies ACEC, Rainbow Hills ACEC, and suitable WSR corridors. Wildlife species located in the withdrawn areas would be protected from surface-disturbing activities that could result from locatable minerals activities.

Salable Minerals

The type of impacts experienced from the disposal of salable minerals would be the same as those described under Alternative N. Alternative C allows sale of mineral materials (salable minerals) on 1,541,700 acres (72% of the RFO). However, new sites would involve only small areas of land and would be subject to NEPA review. Effects on wildlife would be addressed on a case-by-case basis before sales were permitted, and potential impacts would be mitigated.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Under Alternative C, the Dirty Devil River, Beaver Wash Canyon, Larry Canyon, No Man's Canyon, Robbers Roost Canyon, Sams Mesa Box Canyon, Twin Corral Box Canyon, Fish Creek, Maidenwater Creek, Quitchupah Creek, and the Fremont River in Fremont Gorge and below Capitol Reef National Park to the Caineville ditch diversion would be designated as suitable WSRs. Management to protect their outstandingly remarkable values, tentative classification, and free-flowing nature would benefit species such as migratory birds that use these areas. (Management could include closing the areas to OHV us, closing the areas to leasing, and withdrawing the areas from mineral entry.) A lack of potential for surface-disturbing activities would also result in the protection of habitat used by the prey of wildlife species.

Areas of Critical Environmental Concern

Under Alternative C, 16 areas (886,810 acres) would be designated as ACECs: Badlands, Bull Creek, Dirty Devil, Fremont Gorge/Cockscomb, Henry Mountains, Horseshoe Canyon, Kingston Canyon, Little Rockies, Lower Muddy Creek, Old Woman Front, Parker Mountain, Quitchupah, Rainbow Hills, Sevier Canyon, Thousand Lakes Bench, and SSS ACECs. ACECs provide protection for fish and wildlife by restricting many surface-disturbing activities, including mineral leasing, OHV use, wood cutting, new ROWs, or motorized camping. Those ACECs with relevant and important values related to fish and wildlife resource values and associated habitat would have special management to protect these resources, indirectly resulting in additional protection for big game species and Greater sage-grouse and associated habitat. In some areas, notably the Henry Mountains, vegetation manipulation projects could cause short-term adverse impacts to bird habitat. These effects would be mitigated in the long term by anticipated improvement in vegetation health and vigor.

Alternative D

Impacts from Soil Resources and Water Resources

Impacts would be the same as those described under Alternative C.

Impacts from Vegetation

Vegetation Treatments

Impacts would be the same as those described under Alternative C.

Management Activities in Riparian and Wetland Areas

Impacts would be the same as those described under Alternative C.

Invasive Species Management

Impacts would be the same as those described under Alternative C.

Insect Pest Management

Impacts would be the same as those described under Alternative C.

Impacts from Visual Resources

The types of impacts would be the same as described under Alternative C, except that Alternative D would designate more acres as VRM Classes I and II (1,196,300 acres, or 56% of the RFO), protecting fish and wildlife species by restricting ground-disturbing activities in these areas.

Under Alternative D, 355,100 acres (17%) would be designated as VRM Class III and 576,600 (27%) would be managed as VRM Class IV. These areas, which would be subject to actions that allow for greater landscape modification and therefore greater surface disturbance, could be subject to such actions as complete vegetation removal, which would drastically alter (at least in the short term) the habitat for fish and wildlife species. This alternative designates far fewer acres as VRM Classes III and IV than any other alternative, so impacts to fish and wildlife would be the least of all alternatives because of VRM class designations.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative C.

Impacts from Fish and Wildlife

Impacts would be the same as those described under Alternative C.

Impacts from Wild Horses and Burros

Impacts would be the same as those described under Alternative N.

Impacts from Fire and Fuels Management

Impacts would be the same as those described under Alternative C.

Impacts from Non-WSA Lands with Wilderness Characteristics

Protecting the non-WSA lands with wilderness characteristics would provide habitat for wildlife species that are vulnerable to human influence and whose continued existence is dependent on and reflective of wild, extensive, undisturbed habitat. Management actions for non-WSA lands with wilderness characteristics would reduce surface disturbance and habitat fragmentation. Species within the RFO that benefit from the isolation and lack of disturbance afforded by these areas include bison and desert bighorn sheep.

Impacts from Forestry and Woodland Products

The types of impacts experienced as a result of forest and woodland products harvesting would be similar to those described under Alternative N. However, under Alternative D, commercial and non-commercial harvesting would not be allowed in WSAs, suitable WSR corridors, and non-WSA lands with wilderness characteristics. Thus, impacts from this type of activity would occur over a much smaller area than under any other alternative, potentially providing the greatest benefit to fish and wildlife species. However, the rejuvenating benefits that the clearing of woodland areas would have on habitats would not be realized.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative C.

Impacts from Recreation

The types of impacts experienced as a result of recreation management would be similar to those described under Alternative C, except that Alternative D would establish seven SRMAs (1,358,100 acres) to manage recreational use and to mitigate impacts caused by this use. No SRMAs would be established for OHV use, thus decreasing the potential for impacts that this type of use could have on fish and wildlife species. As described under Alternative C, the development of facilities could have localized, site-specific impacts, although NEPA review would occur prior to construction of any facilities, thus mitigating and minimizing impacts to wildlife.

Impacts from Travel Management

The types of impacts experienced as a result of travel management would be similar to those described under Alternative N. However, under Alternative D, no acres would be open to cross-country OHV use; OHV use on 972,800 acres would be limited to designated routes; and 1,155,200 acres would be closed to OHV use. Of all the alternatives, Alternative D would have the least potential impacts that OHV use could cause to fish and wildlife species.

Under Alternative D, there would be 3,043 miles of designated routes, and 1,242 miles that would be closed. Reducing access would reduce adverse effects that OHV use could cause to fish and wildlife species. Route designations would cause the fewest impacts to fish and wildlife under this alternative.

Alternative D proposes the following travel restrictions in wildlife habitat areas: Within deer and elk crucial winter range, limit OHV use to designated routes on 393,000 acres and close 258,000 acres to OHV use; within crucial bison habitat, limit OHV use to designated routes on 44,000 acres and close 207,000 acres to OHV use; and limit OHV use to designated routes in all Greater sage-grouse habitats including breeding (leks), nesting, brood-rearing and wintering habitat. These restrictions would also benefit other wildlife species (including migratory birds) to the extent that the restricted areas overlap with bird breeding habitat. Proposed decisions for limiting motorized camping to designated campsites (and thereby limiting motorized access) would minimize impacts to migratory birds and their habitats because campsites would be designated only where compatible with other resources. Of all the alternatives, Alternative D would provide the most protection from impacts related to motorized travel.

Impacts from Lands and Realty

Land Tenure Adjustments

Impacts would be the same as those described under Alternative N.

Withdrawals

Alternative D would recommend withdrawing from mineral entry all non-WSA lands with wilderness characteristics, all or parts of several ACECs, suitable WSR corridors, and developed recreation sites (903,900 acres, or 42% of the RFO)—the most under any of the alternatives. Withdrawing these areas from mineral entry would reduce adverse impacts that mineral developments could cause to fish and wildlife species in these areas. More than any other alternative, Alternative D would reduce potential impacts caused by mining activity.

Rights-of-Way and Other Land Use Authorizations

The types of impacts experienced as a result of land use authorizations would be similar to those described under Alternative N, except that more ROW avoidance areas are proposed under Alternative D (1,203,800 acres closed to oil and gas leasing or open with NSO, 12 suitable WSR segments, and 16 ACECs). Because NEPA review would be required prior to issuing any land use authorization, impacts to fish and wildlife would be minimized.

Wind and Solar Energy

Impacts would be the same as those described under Alternative C.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Under Alternative D, 2% of bighorn sheep habitat, 12% of bison habitat, 81% of elk habitat, 53% of mule deer habitat, and 100% of pronghorn antelope habitat would be within areas that would be open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU) (Table 4-16 through Table 4-20). Consequently, these species (particularly elk, mule deer, and pronghorn antelope because the majority of their habitat would be in these lease categories) would experience impacts caused by oil and gas development, although the impacts would be significantly less for most of these species than under any of the other alternatives. Other wildlife that occurs within areas that are open to leasing or open to leasing subject to moderate constraints (TL, CSU) could also be adversely impacted by oil and gas development activities. Of all the alternatives, Alternative D would have the least potential impacts caused by oil and gas development to fish and wildlife.

Leasable Minerals—Coal

Impacts would be the same as those described under Alternative N.

Geophysical

Under Alternative D, BLM would allow geophysical explorations outside of WSAs, non-WSA lands with wilderness characteristics, WSR corridors, and ACECs as determined through site-specific NEPA analysis. Potential impacts that geophysical exploration could cause to fish and wildlife species would be least under this alternative because the least amount of land would be available for this type of activity.

Locatable Minerals

The types of impacts caused by locatable mineral activities would be the same as those described under Alternative N. However, under Alternative D, the location, exploration, and development of locatable minerals could occur throughout the RFO, except in areas withdrawn from mineral entry (903,900 acres), including Lonesome Beaver Campground, McMillan Spring Campground, Starr Springs Campground, Dandelion Flat Picnic Area, Hog Springs Picnic Area, Otter Creek Reservoir Recreation Sites, Kingston Canyon Recreation Site, Koosharem Picnic Area, Dirty Devil ACEC, Fremont Gorge/Cockscomb ACEC, Badlands ACEC, Henry Mountains ACEC, Horseshoe Canyon ACEC, Little Rockies ACEC, Rainbow Hills ACEC, and suitable WSR corridors and non-WSA lands with wilderness characteristics. Fish and wildlife species in the withdrawn areas would be protected from surface-disturbing activities that could result from locatable minerals activities. Of all the alternatives, Alternative D would have the least potential impacts caused by locatable mineral development.

Salable Minerals

With the implementation of Alternative D, 1,160,500 acres (WSAs, non-WSA lands with wilderness characteristics, Dirty Devil ACEC, Fremont Gorge/Cockscomb ACEC, Badlands ACEC, Henry Mountains ACEC, Horseshoe Canyon ACEC, Little Rockies ACEC, Rainbow Hills ACEC, and within one-quarter mile of the high water mark on each bank of the river segment of suitable WSRs) would be closed to disposal of salable minerals. The exclusion of these areas from surface-disturbing mineral materials activities would indirectly benefit fish and wildlife species within these areas. The disposal of mineral materials on other public lands would be allowed on a case-by-case basis. Of all the alternatives, Alternative D would have the least potential impact caused by mineral material sales to fish and wildlife species.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Impacts would be the same as those described under Alternative C.

Areas of Critical Environmental Concern

Impacts would be the same as those described under Alternative C.

4.3.10 Wild Horses and Burros

The goal of the Wild and Free-Roaming Horse and Burro Act is to manage wild horses and burros "in the area where presently [1971] found as an integral part of the natural system of the public lands." The Act and subsequent regulations direct that wild horses and burros be managed to ensure a thriving natural ecological balance with the minimum feasible management required to maintain the populations. Managing wild horse and burro populations at a sufficient size to be genetically viable is important to accomplish this goal. Some management decisions could impact the viability of wild horse or burro populations. Populations that would require long-term, intensive management would not comply with the minimum feasible management regulations and would therefore be noted as an impact.

Methods and Assumptions

Impact analyses and conclusions are based on interdisciplinary team knowledge of resources in the RFO, review of existing literature, and information provided by other agencies. Effects are quantified when possible. Spatial analyses were conducted by using GIS data and analyses. Impacts are described using ranges of potential impacts or in qualitative terms, if appropriate.

Environmental Consequences

Impacts to wild horses and burros would likely result from actions proposed under the following resource management programs:

- Soil Resources and Water Resources
- Special Status Species
- Wild Horses and Burros
- Non-WSA Lands with Wilderness Characteristics
- Livestock Grazing
- Recreation
- Travel Management
- Minerals and Energy
- Special Designations.

Other programs were determined to have little or no impact on wild horses and burros. There are no WSR decisions that would impact wild and horse burro resources.

Alternative N: No Action

Impacts from Soil Resources and Water Resources

Reducing surface disturbance and erosion would help maintain and improve the quality and quantity of forage available for burros in the Canyonlands HMA. Reduction would be achieved through the application of BMPs such as reclaiming disturbed areas, minimizing the amount of access roads, requiring weed-free feed to reduce the potential for spread of noxious weeds, and others, as listed in Appendix 14.

Impacts from Special Status Species

Actions to preserve SSS could maintain forage resources, but some habitats or specific populations of SSS might be fenced or otherwise protected. In comparison to the HMA acreages, the impacts to these areas would not be significant if the fenced area was not a water source. Within this desert environment, fencing that excluded the burros from water could result in moderate-to-major impacts, depending on the number and locations of water sources involved.

Impacts from Wild Horses and Burros

The preliminary wild burro AML in the Canyonlands HMA would serve to maintain a population of wild burros within the genetically viable range. Although forage would not specifically be allocated to the wild burros, sufficient forage would be available for the AML, so no impacts would exist.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under Alternative N, resulting in no additional protection for wild horses and burros.

Impacts from Livestock Grazing

Because forage would not be allocated to livestock on the northeastern portions of the Canyonlands HMA, livestock grazing would cause no impact to wild burros in these areas. In the remainder of the Canyonlands HMA, competition for habitat resources (specifically forage and water) could continue between livestock and wild horses and burros. In the long term, this competition could change the distribution patterns or reproductive success of the wild burros in these areas. Impacts would be mitigated through monitoring and adjustments in forage use.

Impacts from Recreation

No developments, facilities, or SRMAs would be proposed within the Canyonlands HMA. Therefore, there would be no impact on wild horses and burros from these types of developments or management. Recreation use in the remote area of the Canyonlands HMA has increased, and that trend is expected to continue. In the long term, unstructured recreation use in this area could result in adverse impacts to the burros because of harassment by visitors, passage of motorized vehicles, and use of natural water sources.

Impacts from Travel Management

In the Canyonlands HMA, OHV use would be limited to existing routes on more than 50% of the HMA. The remaining acreage would mostly be open to cross-country OHV use, with a small southwest portion of the HMA (where the Dirty Devil WSA overlaps the HMA) closed to OHV use. The presence of OHV recreation users on 45 miles of designated routes in the HMA could temporarily displace wild burros from the proximity of riders. On those portions of the Canyonlands HMA that would be open to cross-country OHV use, vegetation loss resulting from cross-country travel could reduce available forage for wild horses and burros. Given the size of the HMA, the limited number of routes, and the amount of anticipated use, the wild and free-roaming nature of the herd would not likely be eliminated.

Impacts from Minerals and Energy

The Canyonlands HMA is located within lands predicted to have a low development potential for oil and gas. Impacts to burros would therefore be unlikely. More than 50% of the HMA overlaps portions of the Horseshoe Canyon North, Horseshoe Canyon South, French Spring/Happy Canyon, and Dirty Devil WSAs. These areas are managed according to the IMP and are closed to leasing, prohibiting the leasing of non-energy solid minerals and disposal of mineral materials. Therefore, the potential for mineral and energy development to impact burros is minimal.

Impacts from Special Designations

Wilderness Study Areas

Managing the Horseshoe Canyon North, Horseshoe Canyon South, French Spring/Happy Canyon, and Dirty Devil WSAs according to the IMP would preclude most surface-disturbing activities in these areas. Portions of these WSAs overlap more than 50% of the Canyonlands HMA. Precluding surface disturbance in these areas would maintain forage levels and preserve the free-roaming nature of the wild

burros in the Canyonlands HMA. However, managing according to the IMP could also make direct management, such as gathers, more difficult.

Areas of Critical Environmental Concern

No ACECs proposed under Alternative N would overlap with the Canyonlands HMA, resulting in no impacts to wild horses and burros.

Alternative A

Impacts from Soil Resources and Water Resources

Impacts would be the same as those described under Alternative N.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative N.

Impacts from Wild Horses and Burros

Impacts would be the same as those described under Alternative N.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs would be proposed under Alternative N, resulting in no additional protection for wild horses and burros.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

The entire Canyonlands HMA lies within the proposed Dirty Devil SRMA. Managing the Dirty Devil SRMA for a high probability of experiencing solitude with low interaction or evidence of other users would result in low levels of surface-disturbing developments and human presence, preserving the wild and free-roaming nature of wild burros in the Canyonlands HMA.

Impacts from Travel Management

Under Alternative A, no areas within the Canyonlands HMA would be open to cross-country OHV use, eliminating OHV-related impacts to the wild and free-roaming nature of the wild burros. The entire Canyonlands HMA would be limited to designated routes. The presence of OHV recreation users on 45 miles of designated routes in the HMA could temporarily displace wild burros from the proximity of riders. Given the size of the HMA, the limited number of routes, and the amount of anticipated use, the wild and free-roaming nature of the herd would not likely be eliminated.

Impacts from Minerals and Energy

Impacts would be the same as those described under Alternative N.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Areas of Critical Environmental Concern

There would be no ACECs proposed under Alternative A, resulting in no impacts to wild horses and burros.

Proposed RMP

Impacts from Soil Resources and Water Resources

Impacts would be the same as those described under Alternative N.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative N.

Impacts from Wild Horses and Burros

The proposed wild burro AML of 60–100 burros in the Canyonlands HMA would establish and maintain a genetically viable population of wild burros. Sufficient forage would be allocated to wild burros, to meet the AML. The population of wild burros would remain stable, with normal population increases for the area. There would be no difference in this impact compared to Alternative N, except that a formal AML would be established and forage is allocated. Allowing introductions of individuals from other wild burro herds into the HMA would enhance the ability to manage viable populations and decrease the gather frequency.

Impacts from Non-WSA Lands with Wilderness Characteristics

The Canyonlands HMA overlaps portions of the Labyrinth Canyon and Horseshoe Canyon South non-WSA lands with wilderness characteristics. Because non-WSA lands are closed to leasing or open to leasing subject to major constraints (NSO), require motorized users to remain on designated routes, and are generally precluded from surface-disturbing activities, wild burros roaming in these areas would be less apt to encounter human activity. This management would reduce stress levels and allow for burros' free-roaming nature, with minimal human intervention and disturbance.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

Impacts would be the same as those described under Alternative A.

Impacts from Travel Management

Impacts under the Proposed RMP would be similar to those described under Alternative A. No areas within the Canyonlands HMA would be open to cross-country OHV use; more than 50% of the HMA would be closed to OHV use, eliminating OHV-related impacts to the wild and free-roaming nature of wild burros. OHV use in the remainder of the HMA would be limited to designated routes. As under Alternative N or A, the presence of OHV use on 45 miles of routes designated open in the Canyonlands HMA could temporarily displace wild burros from the proximity of use. Given the size of the HMA, the limited number of routes, and the amount of anticipated use, the burros' wild and free-roaming nature would not be eliminated.

Impacts from Minerals and Energy

Impacts would be the same as those described under Alternative N.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild Scenic Rivers

WSRs would have little or no impact on Wild Horses & Burros. The HMA does not overlap with any of the suitable or eligible WSR segments.

Areas of Critical Environmental Concern

No ACECs proposed under the Proposed RMP would overlap with the Canyonlands HMA, resulting in no impacts to wild horses and burros.

Alternative C

Impacts from Soil Resources and Water Resources

Impacts would be the same as those described under Alternative N.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative N.

Impacts from Wild Horses and Burros

Increasing the AML to 120–200 wild burros in the Canyonlands HMA would allow wild burros to be the predominant user of the area's resources. This AML, a 100% increase compared to the Proposed RMP, would allow for the population to be maintained well above the level needed for a genetically viable population. Sufficient forage (1,200 AUMs) to meet the AML would be allocated to wild burros. The population of wild burros would be allowed to increase, with water as the main limiting factor in the area.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs would proposed under Alternative C, resulting in no additional protection for wild horses and burros.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

Impacts would be the same as those described under Alternative A.

Impacts from Travel Management

No areas within the Canyonlands HMA would be open to cross-country OHV use; more than 50% of the HMA would be closed to OHV use, eliminating OHV-related impacts to the wild and free-roaming nature of the wild burros. OHV use in the remainder of the HMA would be limited to designated routes. These impacts are the same as under the Proposed RMP; however, the presence of OHV use on designated routes would be reduced by 57% under Alternative C. Wild burros could be temporarily displaced by OHV use on only 19 miles of open routes. Given the size of the HMA, the limited number of routes, and the amount of anticipated use, the burros' wild and free-roaming nature would not be eliminated.

Impacts from Minerals and Energy

Impacts would be the same as those described under Alternative N.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Areas of Critical Environmental Concern

A small portion of the proposed Dirty Devil ACEC and almost all of the proposed Horseshoe Canyon ACEC overlaps with the Canyonlands HMA. Management prescriptions for the protection of these ACECs' relevant and important values could impact wild burros. Proposed actions that would reduce surface disturbance and improve water and riparian resources would benefit the burros. These actions would include implementing VRM Class II designations, limiting OHV use, and restricting oil and gas leasing. However, fencing of riparian areas to exclude livestock would also exclude burros. Unless water was developed outside of the riparian area prior to fencing, this decision could result in loss of water sources for the burros. Within this desert environment, excluding the burros from water could result in moderate-to-major impacts, depending on the number and location of water sources involved.

Alternative D

Impacts from Soil Resources and Water Resources

Impacts would be the same as those described under Alternative N.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative N.

Impacts from Wild Horses and Burros

Impacts would be the same as those described under Alternative C.

Impacts from Non-WSA Lands with Wilderness Characteristics

The Canyonlands HMA overlaps portions of the Labyrinth Canyon, Horseshoe Canyon South, and Dirty Devil/French Spring non-WSA lands with wilderness characteristics. Because non-WSA lands are closed to leasing, closed to OHVs, and generally precluded from surface-disturbing activities, wild burros roaming in these areas would be less apt to encounter human activity. This would reduce stress levels and allow for their free-roaming nature, without human intervention and disturbance.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

Impacts would be similar to those described under Alternative A. However, under Alternative D, the majority of the Dirty Devil SRMA would be closed to OHV use and closed to leasing, for the protection of WSAs and non-WSA lands with wilderness characteristics. Under Alternative D, more acres would also be managed for primitive to semi-primitive recreation opportunities. This management would result in additional acres being protected from surface-disturbing activities, resulting in additional benefits to the burros, compared with the other alternatives.

Impacts from Travel Management

Under Alternative D, the Canyonlands HMA would be closed to OHV use, eliminating all OHV-related impacts to the wild and free-roaming nature of the wild burros.

Impacts from Minerals and Energy

More than 50% of the HMA overlaps portions of the Horseshoe Canyon North, Horseshoe Canyon South, French Spring/Happy Canyon, and Dirty Devil WSAs. These areas are managed according to the IMP and are closed to leasing of oil and gas, leasing of non-energy solid minerals, and disposal of mineral materials. Under Alternative D, the remainder of the HMA, which lies within non-WSA lands with

wilderness characteristics, would also be closed to leasing. Mineral and energy development would cause no impact to burros.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Areas of Critical Environmental Concern

The impacts under Alternative D would be similar to those under Alternative C. However, management actions to protect non-WSA lands with wilderness characteristics within ACECs would further reduce the potential for surface disturbance, compared to Alternative C, thus resulting in increased benefits to wild burros. Fencing of riparian areas to exclude livestock would not be allowed on non-WSA lands within the ACECs, reducing the risk of excluding the burros from water sources. However, if long-term conditions resulted in these riparian areas failing or functioning at risk, loss of water could still cause adverse impacts to the burros.

4.3.11 Fire and Fuels Management

This analysis addresses potential impacts on fire and fuels management, caused by implementing the management actions under the alternatives described in Chapter 2. Impacts on resources, resource uses, and designations resulting from implementation of the fire management program are discussed in those particular resource sections in this chapter. This analysis focuses on those management alternatives or actions that affect fire intensity, frequency, and suppression efforts.

Many of the forest, woodland, and rangeland ecosystems in the RFO are not functioning properly because of lack of disturbance such as fire. Decisions proposed in Chapter 2 for managing the various resources and resources uses would impact BLM's ability to maintain or restore properly functioning vegetation and to manage hazardous fuel loads. The alternatives could also impact the ability to manage wildland fire use, wildfires, and prescribed fire programs.

Methods and Assumptions

Table 4-21 illustrates the assumptions for each fire management activity, by alternative.

Table 4-21. Average Annual Treatment Acreage by Alternative

Fire Management Activity	Alternative N (No Action)	Alternative A	Proposed RMP	Alternatives C and D
Wildland Fire Use	25,000 acres	5,000 acres	25,000 acres	13,000 acres
Prescribed Fire Treatments	25,000 acres	35,000 acres	25,000 acres	11,000 acres
Non-Fire Fuels Treatments	23,600 acres	33,600 acres	23,600 acres	2,000 acres
Total Treatments	73,600 acres	73,600 acres	73,600 acres	26,000 acres
Estimated Wildfire	12,000 acres	4,000 acres	4,000 acres	4,000 acres
Post-Fire Rehabilitation	No annual acreage is listed. ESR would be conducted on any acreage that is determined to have been damaged and in need of rehabilitation.			

This analysis was based on the following assumptions:

- Fire is an important functional, natural disturbance in many of the ecological systems found in the RFO.
- A direct relationship exists between the density of human use within the RFO and the frequency of human-caused fires.
- Fire size and intensity are more likely to increase as fuel loading increases.
- Wildland fire use would not be expected to require rehabilitation. If inadvertent resource damage did occur, rehabilitation would be applied.
- Demand for fuels treatment will continue to increase over the life of the plan.

- All conservation measures pertaining to fire suppression operations would be followed, unless firefighter or public safety or the protection of property, improvements, or natural resources would render them infeasible during a particular operation. All conservation measures pertaining to fuels treatments would be followed when implementing wildland fire use, prescribed fires, and other vegetation treatments.

The analysis of potential impacts to fire and fuels management is based on the expertise of BLM resource specialists at the RFO, the Central Utah interagency fire and fuels management program, information in the Utah Statewide Land Use Plan Amendment for Fire and Fuels Management (BLM 2005e), and scientific literature. Effects were quantified, when possible. Best professional judgment was used when quantifiable data were unavailable.

In 2005, a Fire Management Plan (FMP) Environmental Analysis was completed for the Richfield District. The Final FMP amended the existing plans and proposed goals for desired conditions by using vegetation treatments including wildfire, prescribed fire, mechanical (including hand-cutting) and chemical treatments. The consequences analysis below discusses the effects that the various plan decisions would have on fire and fuels management.

Environmental Consequences

Impacts to fire and fuels management would result from actions proposed under the following resource management programs:

- Air Quality
- Vegetation
- Cultural Resources
- Visual Resources
- Special Status Species
- Fish and Wildlife
- Fire and Fuels Management
- Non-WSA Lands with Wilderness Characteristics
- Forestry and Woodland Products
- Livestock Grazing
- Recreation
- Travel Management
- Minerals and Energy
- Special Designations.

Other programs were determined to have little or no impact on fire and fuels management.

Alternative N: No Action

Impacts from Air Quality

Maintaining State of Utah Air Quality Standards could result in fewer acres burned by using prescribed fires or wildland fire use because NAAQS cannot be exceeded. All projects must comply with the Utah Interagency Smoke Management Rule, which may limit the number of acres that could be burned or days on which burns could occur. If the air quality or Class I airsheds could be adversely impacted, wildland fire use and prescribed fires could be suspended. Consideration of regional haze could increase the restrictions on wildland fire use or prescribed fire. Potential effects to air quality would be addressed during development of the wildland fire implementation plan for each wildland fire use and in the burn

plan for each prescribed fire. Emissions from wildfire are considered acts of nature and are outside the scope of this analysis. Over time, air quality management could create minor-to-moderate impacts to the fire and fuels management program.

Impacts from Vegetation

Continuing to manage vegetation as proposed under Alternative N would move vegetation toward a more ecologically sustainable condition over a multiple-year period, as disclosed in the 2005 Land Use Plan Amendment. Over time, management would also lower the risk of losing key ecosystem components because of severe wildfires. The need for post-fire stabilization, rehabilitation, and restoration to control soil erosion, loss of wildlife habitat, and other risks would decrease. Vegetation management decisions would provide no adverse impacts to fire and fuels management under Alternative N.

Impacts from Cultural Resources

Proposed decisions for cultural resources could have some impact on the design of fuels treatment projects, as determined through site-specific environmental analysis. Projects would be designed with specific mitigations, as necessary, to inventory and protect cultural resources. Site-specific mitigations could change the design of and increase the costs of fuels treatment projects.

Cultural resources are often more at risk from impacts caused by fire suppression activities than from wildland fire itself. Suppression efforts such as fire line construction (hand or mechanical) or the establishment of helicopter bases, safety zones, and fire camps may be ground disturbing and have the potential to destroy artifacts and the integrity of cultural resource sites. Mitigations for cultural resources could have moderate-to-major impacts for prescribed fire and mechanical treatments under Alternative N.

Impacts from Visual Resources

Because fuels treatments would need to be compatible with VRM classes, the types and scope of fuels treatments would be limited in VRM Classes I and II. Alternative N includes no VRM Class I areas and 529,500 acres (25% of the RFO) of VRM Class II areas. These designations would have negligible-to-moderate impacts on fire and fuels management, depending on the proposed site.

There may be a direct conflict with VRM Class II areas if the wildland/urban interface abuts them. The National Fire Plan directs the agency to reduce hazardous fuels on federal lands adjacent to or near wildland/urban interface areas.

Proposed decisions for VRM could have some impact on the design of non-fire fuels treatment projects. Impacts to visual resources would be determined through site-specific environmental analysis. Potential effects to visual resources would be addressed during development of the wildland fire implementation plan for each wildland fire use.

Impacts from Special Status Species

Proposed decisions for SSS could impact the design of vegetation treatment projects, as determined through site-specific environmental analysis. Potential effects to SSS would be addressed during development of the wildland fire implementation plan for each wildland fire use.

Under this alternative, surface disturbing activities would be prohibited near Greater sage-grouse leks from March 1 through July 15 and within sage-grouse brooding/nesting habitat from April 1 through June 15. These proposed decisions to protect Greater sage-grouse breeding and nesting habitat would have a minor impact on vegetation treatments in the sagebrush steppe vegetation type. Project design would be mitigated to accommodate sage-grouse stipulations, increasing design and survey costs. Projects would be designed to limit introduction of invasive understory species. Measures to mitigate fire management

actions in SSS habitats could increase suppression costs, limit suppression equipment choices and tactics, require additional effort from firefighters, and limit options for treating hazardous fuels in some areas. Reintroductions of SSS could increase the areas in which these measures would be required. Impacts of the measures and reintroductions could range from negligible to minor, depending on the area and frequency and intensity of fires. Implementing species-specific restrictions could impact fire suppression activities and fuels treatment implementation.

Limiting available tools could reduce the effectiveness and efficiency of fuels reduction treatments, potentially resulting in negligible-to-moderate impacts, depending on the type of fuels treated, size of the fuels treatment, and the threat of wildfire. A full analysis, by vegetation type, for each species can be found in the *2005 Utah Land Use Plan Amendment for Fire and Fuels Management* (BLM 2005e).

Impacts from Fish and Wildlife

Building new artificial water sources would provide water for fire suppression activities. Effects would be localized and would depend on whether fires occurred near the water developments. Impacts would range from negligible to minor.

Pronghorn antelope-passable fences would reduce some seasonal fuel loads by minimizing tumbleweeds piled along fences. Impacts would be negligible to minor, as this problem has not been significant in the past.

Impacts from Fire and Fuels Management

Projected annual acreage of fire management activity is shown in Table 4-21. Continuing wildland fire management as proposed under Alternative N would (if funded) allow fire to begin to be reintroduced to fire-adapted ecosystems, reduce hazardous fuels to meet vegetative desired conditions, suppress wildfires appropriately, and support a full emergency site rehabilitation program for ecosystem rehabilitation.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under Alternative N, resulting in no impacts to fire and fuels management.

Impacts from Forestry and Woodland Products

Management actions implemented to support the objectives of the Healthy Forest Restoration Act of 2003 would complement the ability to maintain or restore properly functioning vegetation and reduce hazardous fuels. This management assumes that activity-created fuels would be treated. Fire and fuels management activities often complement or work in conjunction with forestry and woodland programs to move toward vegetative desired conditions, especially in fire-adapted vegetative communities. Much of the current pinyon-juniper cover is more dense than the desired conditions. Fire and fuels reduction activities usually reduce density and convert cover types to a more desirable sagebrush-grass vegetative communities.

Impacts from Livestock Grazing

Livestock grazing could reduce fine-fuel loads and therefore the size and severity of wildland fires, which includes both prescribed fire and wildland fire use. During the planning phases of prescribed fire, non-use or reduced use could be requested to mitigate the lack of fine fuels in necessary areas. This does not address fine-fuel usage by wildlife. Impacts would depend on the timing, season, and location of the fire.

Impacts from Recreation

Proposed decisions regarding recreation management would have minor-to-moderate impacts on the ability to maintain or restore properly functioning vegetation and to reduce hazardous fuels. Recreational

use, such as hunting seasons and OHV special events, could limit the timing of prescribed and wildland fire use.

Increased participation in recreation activities and larger areas impacted by recreation would increase the potential for human-ignited fires. More and improved facilities and trailheads could cause an increased suppression workload, which would have a minor to moderate impact on fire and fuels management.

Impacts from Travel Management

The potential for human-ignited wildfires would increase with increased human use in the RFO. Areas accessible to motorized vehicles would likely be the most susceptible to human-ignited wildfires, but increased ignitions and acreage burned because of increased access would be difficult to quantify. Maintaining or upgrading designated routes could make these areas more accessible to fire suppression vehicles but would lead to increased public use. Increased mileage of roads and trails would result in less continuous fuels. In such areas, fires could not spread as rapidly as in areas in which fuels were more continuous, making it more difficult to restore fire to its historical role in fire-adapted vegetation.

Under Alternative N, 1,636,400 acres (77%) of the RFO would be open to motorized vehicles, allowing the potential for human-ignited wildfires over a large portion of the RFO and continued increase of user-developed trails. Motor vehicles would be limited to existing, designated, and maintained routes on 277,600 acres (13%) of the RFO; 214,000 acres (10%) of the RFO would be closed to motorized vehicle use. Under this alternative, 4,315 miles of unpaved routes in the RFO would be open to motorized use; the most under all the alternatives.

Impacts from Minerals and Energy

Development of oil and gas resources could create new facilities that would need to be protected from wildfire, thus limiting the ability to maintain or restore properly functioning vegetation through prescribed fire and wildland fire use and to reduce hazardous fuels. Impacts would range from negligible to major, depending on the actual location of the facilities and the type of vegetation onsite.

Impacts from Special Designations

Wilderness Study Areas

Managing WSAs under the IMP precludes the use of mechanical (chaining, harrowing) and manual (chainsaw) fuels-reduction treatments. This preclusion could limit the ability to maintain or restore properly functioning vegetation and to reduce hazardous fuels in some areas, such as parts of the Henry Mountains. Prescribed fire and wildland fire use would still be available for treatments in appropriate areas. Fire might be used to move toward desired conditions.

If a fire must be suppressed, then the most effective methods of suppression that are also the least damaging to wilderness values, other resources, and the environment and that require the least expenditure of public funds (including rehabilitation of the area) would be used. Impacts would depend on the location and vegetation type in the WSA.

Wild and Scenic Rivers

Under Alternative N, all eligible river segments (12 segments—135 miles) would be managed to protect their outstandingly remarkable values, free-flowing nature, and tentative classification. Proposed treatments in these river corridors would be allowed only if it was determined that they would not result in impacts to the future suitability or classification of the river segment. This management could have some impact on the design of fuels treatment projects and could limit the ability to maintain or restore properly functioning vegetation and to reduce hazardous fuels in these areas.

Areas of Critical Environmental Concern

Alternative N continues the designation of four ACECs (14,780 acres). Vegetation was specifically identified as a relevant and important value in the Beaver Wash, North Caineville Mesa, and South Caineville Mesa ACECs. Allowing no uses that would cause irreparable damage to the relevant and important values in these areas would reduce surface-disturbing activities within those areas and would protect vegetation resources. Such management could include closing the areas to OHV use; managing the areas as either closed to leasing or open to leasing subject to major constraints (NSO), depending on the ACEC; making lands unavailable for livestock grazing in three of the four ACECs; and acquiring inholdings. However, opportunities for vegetation treatments could be limited, thus inhibiting or preventing attainment of ecological objectives and desired conditions in these areas. Beaver Wash and South Caineville Mesa ACECs are within WSAs, and management prescriptions are directed by the IMP. This would create minor impacts to the fire and fuels management program.

Alternative A

Impacts from Air Quality

Impacts would be similar to those described under Alternative N, because of compliance with state laws. Over time, air quality program management could create minor-to-moderate impacts to the fire and fuels management program.

Impacts from Vegetation

The types of impacts experienced as a result of vegetation management would be similar to those described under Alternative N. However, under Alternative A, maximum treatment acreage limits would be set (averaging 73,600 annually for all treatment methods) and would complement the ability to maintain or restore properly functioning vegetation and to reduce hazardous fuels. However, differences between the two alternatives would be negligible to minor because vegetation and fire and fuels goals and objectives would be similar.

Impacts from Cultural Resources

Impacts would be the same as those described under Alternative N.

Impacts from Visual Resources

Impacts would be the same as those described under Alternative N.

Impacts from Special Status Species

Generally, impacts would be the same as those described under Alternative N. However, this alternative does not include any stipulations on surface disturbing activities within Greater sage-grouse brooding/nesting habitat. Therefore, limitations on surface disturbing activities are less under this alternative compared to Alternative N.

Impacts from Fish and Wildlife

Impacts would be the same as those described under Alternative N.

Impacts from Fire and Fuels Management

The types of impacts experienced as a result of fire and fuels management would be similar to those described under Alternative N. Projected annual acreage of fire management activity for Alternative A is shown in Table 4-21. Proposed decisions for wildland fire management would increase the ability to maintain or restore properly functioning vegetation and to reduce hazardous fuels. This alternative would allow the use of a full range of vegetation management tools, including mechanical, biological, manual, prescribed and wildland fire use, and chemical (herbicides). However, differences between the two

alternatives would be negligible to minor because vegetation and fire and fuels goals and objectives would be similar.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under Alternative A, resulting in no impacts to fire and fuels management.

Impacts from Forestry and Woodland Products

Impacts would be the same as those described under Alternative N.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

Alternative A proposes more recreational use and better access, which usually creates more human-ignited wildfires. This alternative proposes the most new facilities, which would need to be protected from wildfire. This need could increase the fire-suppression workload.

Increased access, either by trail or road, would break up the fuel continuity, making it more difficult to restore fire to its historical role in fire-adapted ecosystems. This lack of continuity could have a minor-to-moderate impact, depending on trail/road density and location.

Impacts from Travel Management

The types of impacts experienced as a result of travel management would be similar to those described under Alternative N. However, Alternative A designates 449,000 acres (21%) of the RFO as open to motorized vehicles; motor vehicles would be limited to designated routes on 1,679,000 acres (79%) of the RFO; and 0 acres would be closed to motorized vehicle use. The amount of open areas, although greatly reduced as compared to Alternative N, would still result in the potential for human-ignited wildfires over a large portion of the RFO.

The remainder of the RFO would have motorized use limited to designated routes, thereby limiting the potential for human-ignited wildfires in the majority of the RFO. Fuels would be more discontinuous with increased mileage of roads and trails in fire-adapted vegetation. The public would have access to 4,312 miles of unpaved routes (slightly less than under Alternative N).

Impacts from Minerals and Energy

Impacts would be the same as those described under Alternative N.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Under Alternative A, no eligible river segments would be recommended as suitable. Opportunities for fuels treatments would not be restricted by WSR management, thereby assisting in attaining ecological objectives and reduction of hazardous fuels in the river corridors. This alternative would allow the greatest flexibility for fuels treatments within the eligible river corridors.

Areas of Critical Environmental Concern

No ACECs would be designated under Alternative A. This would result in no impact on the fire and fuels management program.

Proposed RMP

Impacts from Air Quality

Impacts would be the same as those described under Alternative A.

Impacts from Vegetation

Impacts would be the same as those described under Alternative N.

Impacts from Cultural Resources

Impacts would be the same as those described under Alternative N.

Impacts from Visual Resources

Because fuels treatments would need to be compatible with VRM classes, the types and scope of fuels treatments would be limited in VRM Classes I and II. The Proposed RMP would designate 446,900 acres as VRM Class I and 249,800 acres as VRM Class II. These designations could have some impact on the design of non-fire fuels treatment projects, particularly in VRM Class II areas in the Henry Mountains and near the towns of Torrey, Grover, and Teasdale. These impacts would make it more difficult to manage fire and fuels to achieve their goals in these areas. Potential effects to visual resources would be addressed during development of the wildland fire implementation plan for each wildland fire use.

Impacts from Special Status Species

Generally, impacts would be the same as those described under Alternative N. However, the Proposed RMP includes limitations on surface disturbing activities within Greater sage-grouse habitats that are more restrictive than those under Alternatives N and A. These limitations stipulations are expected to have a minor impact on implementation of vegetation treatments since treatments conducted within sage grouse habitat can be successfully completed outside the December 15 through July 15 timing limitation.

Impacts from Fish and Wildlife

Some of the goals of the Proposed RMP are to restore historic habitats and native plant species and to enhance, maintain, and protect ecological resources. Short-term adverse impacts would be offset by long-term effects of rehabilitation activities (built into this alternative for soil disturbing activities), protection of ecological resources (from effective fire suppression), and reduction of fuels (following prescribed fire, non-fire fuel treatment, or implementation of wildland fire use). The subsequent, gradual return to a more natural fire regime would result in long-term beneficial effects.

Impacts from Fire and Fuels Management

Impacts would be the same as those described under Alternative N; this alternative most closely resembles the previously amended plans in fire and fuels management. The combination of all types of fire and fuels treatments, if funded appropriately in the future, could lead to increased vegetation function and reduction of hazardous fuel loads to a maintenance level. Additionally, allowing temporary non-renewable use of targeted livestock grazing to reduce site-specific fuels or noxious and invasive weeds could maintain or improve upland fuel conditions and reduce cheatgrass, fine fuels, and other invasive weeds. In forests and woodlands, this action would reduce fine-fuel loads and noxious and invasive weeds, leading to improved health of these communities.

Impacts from Non-WSA Lands with Wilderness Characteristics

Managing 78,600 acres of non-WSA lands with wilderness characteristics to protect, preserve, and maintain their wilderness characteristics would limit the use of mechanical (chaining, harrowing) and manual (chainsaw) fuels reduction treatments on these lands. These areas would be available for Healthy Lands Initiative projects. However, any projects and fuels treatments would be required to meet the management objectives for the area and would be required to be consistent with VRM Class II objectives. This management could limit the ability to maintain or restore properly functioning vegetation and to reduce hazardous fuels in some areas, such as parts of the Henry Mountains.

Impacts from Forestry and Woodland Products

Impacts would be the same as those described under Alternative N.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

The Proposed RMP proposes to manage for a blend of motorized and non-motorized recreation opportunities. Less motorized access would limit the number of human-caused fires, possibly lessening the need for suppression actions. Fewer facilities (as compared to Alternative A) would also create less suppression needs.

Access to complete fuels treatments could be limited by the establishment of SRMAs, which emphasize primitive recreation. Currently about half of the fuels treatment program uses mechanical applications. These limitations could make it difficult to treat these areas with something other than fire. The Proposed RMP would have moderate-to-major impacts on the fire and fuels management program.

Impacts from Travel Management

The types of impacts from travel management would be similar to those described under Alternative A. However, the Proposed RMP designates only 9,890 acres (less than 1% of the RFO) as open to motorized vehicles, thereby limiting the potential for human-ignited wildfires. This alternative would close 209,900 acres (10% of the RFO) to motorized use, eliminating the potential for human-ignited wildfires in those areas. The remainder of the RFO (1,908,210 acres) would have motorized use limited to designated routes; the public would have access to 4,277 miles of unpaved routes (slightly less than under Alternative N).

Impacts from Minerals and Energy

Impacts would be the same as those described under Alternative N.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Under the Proposed RMP, one suitable segment (5 miles) would be managed to protect its outstandingly remarkable values, free-flowing nature, and tentative classification. Proposed treatments in this river corridor would be allowed only if it was determined that they would not result in impacts to the suitability or tentative classification of the river segment. This management could have some impact on the design of fuels treatment projects and could limit the ability to maintain or restore properly functioning vegetation and to reduce hazardous fuels in this area. The Proposed RMP would allow flexibility for fuels

treatments on fewer miles of eligible river segments than under Alternative A but on more miles than under Alternative N, C, or D.

Areas of Critical Environmental Concern

Proposed management direction for ACECs would have no impact on managing vegetation and reducing hazardous fuels. Management of the Old Woman Front ACEC would provide for fire and fuels management activities. Proposed management to protect relict vegetation would have negligible impact on the fire and fuels management program.

Alternative C

Impacts from Air Quality

Impacts would be similar to those described under Alternative A. Although possibly fewer acres would be treated (both annually and over the life of this Proposed RMP), if the air quality or Class I airsheds could be adversely impacted, wildland fire use and prescribed fires could be suspended. Over time, air quality program management could create minor-to-moderate impacts to the fire and fuels management program.

Impacts from Vegetation

The types of impacts experienced as a result of vegetation management would be similar to those described under Alternative A, although under Alternative C, fewer acres would be treated annually (averaging 26,000 annually for all treatments). In addition, Alternative C proposes using only natural processes to manage vegetation. These processes could be less effective than conventional vegetation treatments and would not be effective in all vegetation communities. This management would limit the ability to maintain or restore properly functioning vegetation and to reduce hazardous fuels in some areas. Vegetation management decisions would have moderate-to-major impacts to fire and fuels management because the acreage treated would be limited.

Impacts from Cultural Resources

Impacts would be the same as those described under Alternative N.

Impacts from Visual Resources

Impacts would be the same as those described under the Proposed RMP.

Impacts from Special Status Species

Impacts would be similar to those described under the Proposed RMP. However, Alternative C does not include a NSO stipulation within ½ mile of Greater sage-grouse leks or a timing limitation (December 15 through March 14) on surface disturbing activities in sage grouse winter habitat. Therefore there would be fewer limitations on doing vegetation treatments under Alternative C compared to the Proposed RMP.

Impacts from Fish and Wildlife

Impacts would be the same as those described under the Proposed RMP.

Impacts from Fire and Fuels Management

Projected annual acreage of fire management activity is shown in Table 4-21. The types of impacts experienced as a result of fire and fuels management would be similar to those described under Alternative A, although under Alternative C, fewer acres would be treated annually (averaging 26,000 annually for all treatments). In addition, this alternative proposes using only natural processes to manage vegetation. These processes could be less effective than conventional vegetation treatments and would not be effective in all vegetative communities. Compared to Alternative A, Alternative C would limit the ability to maintain or restore properly functioning vegetation and to reduce hazardous fuels in some areas,

thus potentially creating greater threats to life, property, and other resources by allowing larger and more severe wildfires.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under Alternative C, resulting in no impacts to fire and fuels management.

Impacts from Forestry and Woodland Products

Commercial timber harvest would not be allowed under Alternative C, potentially resulting in increased fuel loading. The impact of this disallowance would be minor to moderate, as the quantity of forest and woodland products harvested commercially are relatively small in the RFO.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

Alternative C proposes to manage for primarily primitive and semi-primitive recreation opportunities. Less motorized access would limit the number of human-caused fires, possibly lessening the need for suppression actions. Fewer facilities would also create less suppression needs.

Access to complete fuels treatments could be limited by the establishment of SRMAs. Currently about half of the fuels treatment program uses mechanical applications. This limitation could make it difficult to treat areas with something other than fire. Alternative C would have moderate-to-major impacts on the fire and fuels management program.

Impacts from Travel Management

The types of impacts experienced as a result of travel management would be similar to those described under the Proposed RMP. However, Alternative C designates no areas as open to motorized vehicles; motor vehicles would be limited to designated routes on 1,445,000 acres (68%) of the RFO; and 683,000 acres (32%) would be closed to motorized vehicle use. The lack of open areas would minimize the potential for human-ignited wildfires, reducing the fire suppression workload. It would also reduce the ability to treat vegetation with non-fire treatment methods. This reduction would have minor-to-moderate impacts because fire is not always the proper tool to initially treat vegetation.

Impacts from Minerals and Energy

Impacts would be similar to those described under Alternative N but would be reduced in scope because less area would be available for surface-disturbing activities under Alternative C.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Impacts would be the same as those discussed under Alternative N. All 12 suitable river segments (135 miles) would be managed to protect their outstandingly remarkable values, free-flowing nature, and tentative classification under Alternative C. Proposed treatments in these river corridors would be allowed only if it were determined that they would not result in impacts to the suitability or tentative classification of the river segment. This management could have some impact on the design of fuels treatment projects

and could limit the ability to maintain or restore properly functioning vegetation and to reduce hazardous fuels in these areas.

Areas of Critical Environmental Concern

Some proposed wildlife decisions for managing ACECs could limit the ability to maintain or restore properly functioning vegetation and to reduce hazardous fuels by using mechanical means. Proposed management direction (outside WSAs) for suppressing wildfires in the Fremont Gorge/Cockscomb, Henry Mountains, Kingston Canyon, Parker Mountain, Rainbow Hills, and Sevier Canyon ACECs could limit the ability to maintain or restore properly functioning vegetation and to reduce hazardous fuels. Fire would be limited from playing a natural role because of the wildlife limitations in crucial deer habitat; this fire limitation could have a moderate-to-major impact. Proposed management direction for other ACECs would have minor-to-moderate impact on managing vegetation and reducing hazardous fuels.

Alternative D

Impacts from Air Quality

Impacts would be the same as those described under Alternative C.

Impacts from Vegetation

Impacts would be the same as those described under Alternative C.

Impacts from Cultural Resources

Impacts would be the same as those described under Alternative N.

Impacts from Visual Resources

Because fuels treatments would need to be compatible with VRM classes, fuels treatments would be limited in VRM Classes I and II (in which the existing character of the landscape must be preserved or retained). Alternative D would be the most restrictive to fire and fuels management because it has the most VRM Class I and II acres (1,196,300 acres combined or 56% of the RFO).

Impacts from Special Status Species

Impacts would be the same as those described under Alternative C.

Impacts from Fish and Wildlife

Impacts would be the same as those described under the Proposed RMP.

Impacts from Fire and Fuels Management

Impacts would be the same as those described under Alternative C.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under Alternative D, protecting the non-WSA lands with wilderness characteristics would preclude the use of mechanical (chaining, harrowing) and manual (chainsaw) fuels reduction treatments on these lands. This preclusion could limit the ability to maintain or restore properly functioning vegetation and to reduce hazardous fuels in some areas, such as parts of the Henry Mountains.

Impacts from Forestry and Woodland Products

Commercial timber harvest would not be allowed under Alternative D, potentially resulting in increased fuel loading. The impact of this loading would be minor to moderate, as the quantity of forest and woodland products harvested commercially are relatively small in the RFO.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

Impacts would be similar to those described under Alternative C, except there would be even less access under Alternative D. This would have moderate-to-major impacts to the fire and fuels management program.

Impacts from Travel Management

The types of impacts experienced as a result of travel management would be similar to those described under Alternative C. However, Alternative D designates 972,800 acres (46% of the RFO) as limited to designated routes and 1,155,200 acres (54%) as closed to motorized vehicle use. Lack of access would limit the number of human-ignited wildfires, reducing the fire suppression workload. However, it would also reduce the ability to treat vegetation with treatment methods other than those that mimic natural processes (fire and biological). This limitation would have moderate-to-major impacts because fire is not always the proper tool to initially treat vegetation.

Impacts from Minerals and Energy

Impacts would be similar to those described under Alternative N but would be reduced in scope. The least area would be available for surface-disturbing activities under Alternative D.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Impacts would be the same as those described under Alternative C.

Areas of Critical Environmental Concern

Impacts would be the same as those described under Alternative C.

4.3.12 Non-WSA Lands with Wilderness Characteristics

Non-WSA lands with wilderness characteristics are areas having 5,000 acres, or areas less than 5,000 acres that are contiguous to designated wilderness, WSAs or other administratively endorsed for wilderness management lands or, in accordance with the Wilderness' Act's language, areas "of sufficient size as to make practicable its preservation and use in an unimpaired condition". BLM used the same criteria for determining wilderness characteristics as in the 1979 wilderness inventory. The 5,000 acre value was helpful to BLM in making preliminary judgments, but it was not considered a limiting factor.

These areas also provide outstanding opportunities for solitude or primitive forms of recreation (non-motorized and non-mechanized activities in undeveloped settings). Generally, actions that create surface disturbance impact the natural character of these areas and the setting for experiences of solitude and primitive recreational activities. Motorized uses in these areas detract from opportunities for both solitude and primitive forms of recreation.

Lands with wilderness characteristics outside of existing WSAs in the RFO are identified in Chapter 3 and shown on Map 3-9, and include 29 areas within the RFO, totaling 682,600 acres or 32% of the RFO lands. These areas are concentrated on the east side of the RFO, with large blocks in the Henry Mountains and Dirty Devil regions and smaller areas immediately west of Capitol Reef National Park, in southeastern Sevier County, and in southern Piute County (Chapter 3, Non-WSA Lands with Wilderness Characteristics and Map 3-9). Management decisions under Alternatives N, A, and C would, to varying degrees, impact the wilderness characteristics of these lands. The PRMP/FEIS includes management prescriptions for 12 of the 29 areas, totaling 78,600 acres. Proposed decisions under Alternative D would best protect the naturalness and outstanding opportunities for solitude and primitive recreation within these areas. Table 4-22 shows an additive comparison of key proposed decisions under each alternative in Chapter 2 for acres of OHV area designations, miles of designated routes, acres of fluid mineral stipulation areas, acres of VRM class designations, and acres of proposed withdrawals that are within non-WSA lands with wilderness characteristics.

Table 4-22. Comparison of Key Decisions within Non-WSA Lands with Wilderness Characteristics

Resource /Resource Use		Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
OHV Area Designations	Open	656,100 ac 96%	221,800 ac 32%	5,700 ac <1%	0 ac 0%	0 ac 0%
	Limited	5,000 ac 1%	460,800 ac 68%	642,650 ac 94%	473,100 ac 69%	0 ac 0%
	Closed	21,500 ac 3%	0 ac	34,250 ac 5%	209,500 ac 31%	682,600 ac 100%
OHV Route Designations	Miles of Designated Routes	51.2	360.7	429.2	99.7	0
Fluid Minerals	Standard	577,800 ac 85%	329,650 ac 48%	252,000 ac 35%	202,100 ac 30%	0 ac 0%
	TL, CSU	89,800 ac 13%	352,950 ac 52%	288,100 ac 51%	267,100 ac 39%	0 ac 0%
	NSO	6,000 ac 1%	0 ac	141,000 ac 13%	123,400 ac 18%	0 ac 0%

Resource /Resource Use		Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
	Closed to Leasing	9,000 ac 1%	0 ac	1,500 ac 1%	90,000 ac 13%	682,600 ac 100%
Visual Resources	VRM Class I	0 ac 0%	0 ac 0%	0 ac 0%	0 ac 0%	682,600 ac 100%
	VRM Class II	161,265 ac 24%	0 ac 0%	184,465 ac 27%	163,765 ac 24%	0 ac 0%
	VRM Class III	144,955 ac 21%	213,660 ac 31%	117,555 ac 17%	152,955 ac 22%	0 ac 0%
	VRM Class IV	376,380 ac 55%	468,940 ac 69%	380,580ac 56%	365,880 ac 54%	0 ac 0%
Proposed Withdrawals		0 ac 0%	0 ac 0%	11,200 ac 2%	110,900 ac 16%	682,600 ac 100%

Methods and Assumptions

The following assumption regarding the future management of non-WSA lands with wilderness characteristics is made:

- Any new surface disturbing activities proposed would be subject to NEPA analysis. Activities proposed that would not initially meet wilderness characteristic objectives for an area being managed for those characteristics would be mitigated to the extent needed to meet the objectives for both the Proposed RMP and Alternative D.
- The Proposed RMP management actions would protect, preserve and maintain the wilderness characteristics on 78,600 acres through the following land allocations and prescriptions:
  - Designate as Visual Resource Management (VRM) Class II
  - Limit motorized use to designated routes
  - Retain lands in public ownership
  - Designate as an Avoidance Area for rights-of-way (ROW)
  - Designate leasing category as no surface occupancy (NSO), no exceptions, waivers, or modifications
  - Close to mineral material sales
  - Designate as unavailable for further consideration for coal leasing
  - Continue maintenance and use of existing facilities
  - Prohibit private or commercial woodland harvest or seed collection
  - Healthy Lands Initiative projects could be considered where they improve the overall goals and objectives for managing the wilderness characteristics of these areas
- The DRMP/DEIS Alternative D management actions would protect, preserve and maintain the wilderness characteristics on 682,600 acres through the following land allocations and prescriptions:
  - Designate as VRM Class I
  - Manage for primitive and semi-primitive non-motorized recreation
  - Close to motorized use
  - Retain land in public ownership
  - Designate as an Avoidance Area for ROWs
  - Propose for withdrawal from mineral entry

- Close to oil and gas leasing
- Close to mineral material sales
- Designate as unavailable for further consideration for coal leasing.

Environmental Consequences

Impacts to non-WSA lands with wilderness characteristics would likely result from actions proposed under the following resource management programs:

- Soil Resources and Water Resources
- Vegetation
- Cultural Resources
- Paleontological Resources
- Visual Resources
- Special Status Species
- Fish and Wildlife
- Wild Horses and Burros
- Fire and Fuels Management
- Non-WSA Lands with Wilderness Characteristics
- Forestry and Woodland Products
- Livestock Grazing
- Recreation
- Travel Management
- Lands and Realty
- Minerals and Energy
- Special Designations.

Other programs were determined to have little or no impact on non-WSA lands with wilderness characteristics. There are no WSA decisions that would impact non-WSA lands with wilderness characteristics resources.

Alternative N: No Action

Impacts from Soil Resources and Water Resources

No surface disturbance or occupancy would be permitted within the 100-year flood plain (or 500 feet of the bank full line) of perennial streams or perennial reaches of streams (with some exceptions). This protection would prevent soil and vegetation disturbances and placement of structures that would degrade the naturalness of non-WSA lands with wilderness characteristics. Protection of naturalness would preserve the setting needed to support opportunities for primitive forms of recreation and experiences of solitude.

Under Alternative N, no surface disturbance or occupancy would be permitted within 500 feet of natural springs, to protect water quality. Prohibiting soil and vegetation disturbance or placement of structures around natural springs in non-WSA lands with wilderness characteristics would maintain or enhance the naturalness of small portions (approximately 18 acres around each spring) of the non-WSA lands. Protection of the water sources would maintain and enhance the wildlife populations that depend on the water, providing continued opportunities for primitive recreation—(wildlife viewing or hunting).

Impacts from Vegetation

Inventory of riparian areas not functioning or functioning at risk would result in the identification and implementation of measures to restore these areas to proper functioning condition, which would enhance the natural condition of the riparian portions of non-WSA lands with wilderness characteristics. Riparian zones are critical to the lifecycles of many wildlife species (fish, amphibians, mammals, and birds). These areas are typically scenic and desired recreation settings. Maintenance and restoration of riparian zones, and retention of these zones in public ownership, would maintain and enhance opportunities for primitive recreation, including hiking, wildlife viewing, camping, nature study, fishing, and other activities dependent upon water courses and riparian ecosystems. Coordination of these efforts with neighboring federal, state, tribal, and local governments and with private conservation groups would expand the cited benefits to a larger scale and broader reach.

Existing vegetation treatments would be maintained to provide suitable habitat for wildlife and adequate forage for livestock. In the long term, maintenance of vegetation treatment areas through fire would maintain or enhance wildlife habitat and populations of species (deer, elk, bison, Greater sage-grouse, Utah prairie dog, song birds) that are dependent on that habitat. If these treatments occurred in non-WSA lands with wilderness characteristics, healthy wildlife populations would enhance opportunities for primitive recreation (wildlife viewing and hunting). In the short-term, however, burning operations would result in disturbance of the landform and vegetation through fire line construction needed to manage the fire. Furthermore, the presence and noise of people, vehicles, equipment, and aircraft would eliminate opportunities for solitude and primitive and unconfined recreation in proximity to the fire. The impacts on opportunities for solitude and primitive recreation would be temporary, lasting for the duration of the burning operation and reclamation. When the fire and reclamation operations were complete, these opportunities would return. Soil and vegetation disturbance for fire line construction would diminish the natural character of the non-WSA lands, but reclamation would restore the natural conditions in a relatively short period.

The use of aircraft for aerial reseeding of vegetation treatment areas, or the use of rangeland drills, would result in the presence and noise of people, vehicles, equipment, and aircraft that would diminish opportunities for solitude and would conflict with primitive recreational activities. When reseeding was complete, however, these disruptions of opportunities for solitude and primitive recreation would end, and the opportunities would return.

Under Alternative N, vegetation would be manipulated through the full range of treatment tools (including fire, mechanical, chemical, or biological) to achieve and maintain *Fundamentals of Rangeland Health* and the desired vegetation condition. In the long-term, vegetation treatments through fire would restore vegetation communities and a more natural composition of grasses, forbs, shrubs, or trees. If these treatments occurred in non-WSA lands with wilderness characteristics, this objective would enhance the natural character of the non-WSA lands. However, in the short term, a burning operation would result in disturbance of the landform and vegetation because of the fire line construction needed to manage the fire. Further, the presence and noise of people, vehicles, equipment, and aircraft would eliminate opportunities for solitude and primitive and unconfined recreation in proximity to the fire. The impacts on opportunities for solitude and primitive recreation would be temporary, lasting for the duration of the prescribed burning operation and reclamation. When the fire and reclamation operations were complete, these opportunities would return. Soil and vegetation disturbance for fire line construction would diminish the natural character of the non-WSA lands, by introducing an apparent human-made element to the landscape. However, reclamation would restore the natural conditions in a relatively short period.

Mechanical vegetation manipulation in non-WSA lands with wilderness characteristics would have long-term impacts on the natural character of the non-WSA lands and on opportunities for solitude and primitive and unconfined recreation. Although restoration of vegetation communities would be beneficial

to the natural character of non-WSA lands with wilderness characteristics, the use of chainsaws, bulldozers, brush hogs, and so forth to accomplish the objective would leave an obvious imprint of human activity on the land, diminishing the natural character of the non-WSA area(s). Also, in the short term, the presence and noise of people and equipment would eliminate opportunities for solitude and primitive forms of recreation in proximity to the treatment area. In the long term, a setting clearly manipulated by humans would reduce the opportunities for experiencing solitude and primitive recreation.

Weed control through mechanical, biological, and chemical methods would have the same effects on naturalness, solitude, and primitive recreation as those described for vegetation treatments. Restoring vegetation communities to a more natural composition of plants would improve the natural character of non-WSA lands with wilderness characteristics. However, mechanical treatments would have similar effects on naturalness as described previously. Chemical and biological treatment would appear more natural. The noise and presence of people, vehicles, equipment, and aircraft used during treatment of weeds would temporarily reduce opportunities for solitude and would conflict with primitive recreational activities.

Impacts from Cultural Resources

Surface-disturbing actions (other than archaeological research) would not be authorized in the Bull Creek Archaeological District. This action would protect the natural character of 322 acres of the Mount Ellen non-WSA lands with wilderness characteristics by preventing new disturbance that other actions could cause to the land and vegetation. Because no new actions would be permitted to disturb the surface of the non-WSA lands, there would be no presence or noise of the people, vehicles, and equipment needed to implement a future action and thus, no reduction of opportunities for solitude or conflicts with primitive recreational activities.

Mitigation of impacts to cultural resources caused by activities authorized by the BLM would preserve knowledge of cultural resources and some sites. However, although project stipulations would mitigate impacts to cultural resources, they would not prevent implementation of the activity. Depending on the nature of the activity (e.g., surface-disturbing, placement of structures, motorized travel), implementation of the project could still degrade the natural character of non-WSA lands with wilderness characteristics and could conflict with opportunities for solitude and primitive recreation, if the activity took place in a non-WSA area. Consultation with Native American tribes regarding project mitigation would have the same effects as BLM mitigation of authorized activities on cultural resources, and thus on naturalness, solitude, and primitive recreation, as described previously.

Impacts from Paleontological Resources

Decisions on management of paleontological resources provide for inventory, mitigation of impacts to fossils resulting from BLM-authorized activities, interpretation of and education about fossils, collection of common invertebrate and plant fossils, and protection of significant vertebrate and invertebrate fossils. As with cultural resources, knowing more about the paleontological resources of the area, interpreting the resource in an appropriate fashion, viewing fossil sites in the non-WSA lands with wilderness characteristics, and protecting significant fossils from collection or damage would add to the enjoyment of these areas for primitive recreational purposes. Protection of fossils adds to the character of the setting that supports these recreational opportunities. However, collection of even common invertebrate fossils, although providing a primitive recreational experience, would remove an element of the natural landscape.

Impacts from Visual Resources

There are four objectives for VRM (VRM Classes I–IV) that provide for various levels of landscape protection and change. The objective of VRM Class I is to preserve the characteristic landscape; the

objective of VRM Class IV provides for landscape modifications (Chapter 3, Visual Resources). Land use planning decisions to designate and manage areas by Class I objectives would preserve the characteristic landscape. In non-WSA lands with wilderness characteristics, this objective (Class I) would preserve the natural character of the area. VRM Class II objectives would retain the characteristic landscape, allowing for minor changes to the landform and vegetation. This objective would generally protect the natural condition of the land in non-WSA areas. The objective of VRM Class III is to partially retain the existing character of the landscape, allowing for moderate changes to land and vegetation. This objective is not compatible with preserving the natural character of non-WSA lands. Class IV objectives provide for major modification of the landscape, clearly incompatible with preservation of the natural character of non-WSA lands.

Under Class I and II objectives, preserving the natural character of the non-WSA lands would also preserve the undeveloped setting needed to support opportunities for solitude and primitive forms of recreation. Because Class III and IV VRM objectives would not preserve an undeveloped setting, opportunities for both solitude and primitive recreation would be diminished.

Table 4-23 shows the VRM class designations by non-WSA area and by alternative.

Table 4-23. VRM Class Designations, by Non-WSA Lands with Wilderness Characteristics Area (Acres)

Non-WSA Area	Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Bull Mountain					
Class I	0	0	0	0	3,800
Class II	65	0	65	65	0
Class III	55	0	55	55	0
Class IV	3,680	3,800	3,680	3,680	0
Bullfrog Creek					
Class I	0	0	0	0	33,700
Class II	0	0	0	0	0
Class III	5,700	0	5,700	5,700	0
Class IV	28,000	33,700	28,000	28,000	0
Dirty Devil/French Spring					
Class I	0	0	0	0	133,100
Class II	33,600	0	38,700	33,900	0
Class III	31,100	110,900	30,800	30,900	0
Class IV	68,400	22,200	63,600	68,300	0
Dogwater Creek					
Class I	0	0	0	0	3,500
Class II	3,500	0	3,500	3,500	0
Class III	0	3,500	0	0	0
Class IV	0	0	0	0	0
Fiddler Butte					
Class I	0	0	0	0	19,700
Class II	10,900	0	11,000	11,000	0
Class III	3,800	6,700	3,800	3,800	0
Class IV	5,000	13,000	4,900	4,900	0

Non-WSA Area	Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Flat Tops					
Class I	0	0	0	0	23,000
Class II	0	0	0	0	0
Class III	500	0	500	500	0
Class IV	22,500	23,000	22,500	22,500	0
Fremont Gorge					
Class I	0	0	0	0	16,000
Class II	2,200	0	2,200	3,400	0
Class III	3,400	5,100	3,400	12,600	0
Class IV	10,400	10,900	10,400	0	0
Horseshoe Canyon South					
Class I	0	0	0	0	20,600
Class II	3,600	0	13,600	3,600	0
Class III	16,300	20,600	7,000	16,300	0
Class IV	700	0	0	700	0
Jones Bench					
Class I	0	0	0	0	3,300
Class II	0	0	2,600	0	0
Class III	0	1,500	0	0	0
Class IV	3,300	1,800	700	3,300	0
Kingston Ridge					
Class I	0	0	0	0	10,200
Class II	100	0	100	100	0
Class III	2,700	0	2,700	2,700	0
Class IV	7,400	10,200	7,400	7,400	0
Labyrinth Canyon					
Class I	0	0	0	0	12,300
Class II	0	0	2,800	0	0
Class III	12,300	12,300	9,500	12,300	0
Class IV	0	0	0	0	0
Limestone Cliffs					
Class I	0	0	0	0	24,800
Class II	0	0	0	0	0
Class III	1,100	24,500	1,100	1,100	0
Class IV	23,700	300	23,700	23,700	0
Little Rockies					
Class I	0	0	0	0	23,200
Class II	13,100	0	16,900	13,500	0
Class III	8,900	0	6,000	8,500	0
Class IV	1,200	23,200	300	1,200	0
Long Canyon					
Class I	0	0	0	0	16,600
Class II	0	0	0	0	0
Class III	5,400	0	5,300	5,300	0
Class IV	11,200	16,600	11,300	11,300	0

Non-WSA Area	Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Mount Ellen—Blue Hills					
Class I	0	0	0	0	49,800
Class II	15,300	0	16,900	15,300	0
Class III	1,800	2,100	200	1,800	0
Class IV	32,700	47,700	32,700	32,700	0
Mount Hillers					
Class I	0	0	0	0	1,800
Class II	1,200	0	1,200	1,200	0
Class III	300	0	0	300	0
Class IV	300	1,800	600	300	0
Mount Pennell					
Class I	0	0	0	0	65,600
Class II	18,200	0	13,200	18,200	0
Class III	7,700	700	0	7,600	0
Class IV	39,700	64,900	52,400	39,800	0
Muddy Creek/Crack Canyon	0	0	0	0	61,800
Class I	14,500	0	8,100	14,500	0
Class II	11,800	0	11,800	11,800	0
Class III	35,500	61,800	41,900	35,500	0
Class IV					
Mussentuchit Badlands					
Class I	0	0	0	0	700
Class II	0	0	0	0	0
Class III	0	60	0	0	0
Class IV	700	640	700	700	0
Notom Bench					
Class I	0	0	0	0	8,000
Class II	8,000	0	8,000	8,000	0
Class III	0	8,000	0	0	0
Class IV	0	0	0	0	0
Phonolite Hill					
Class I	0	0	0	0	7,900
Class II	1,000	0	1,000	1,000	0
Class III	0	0	0	0	0
Class IV	6,900	7,900	6,900	6,900	0
Pole Canyon/Hunter Spring					
Class I	0	0	0	0	6,000
Class II	0	0	0	0	0
Class III	0	0	0	0	0
Class IV	6,000	6,000	6,000	6,000	0
Ragged Mountain					
Class I	0	0	0	0	25,900
Class II	15,700	0	15,700	15,700	0
Class III	0	15,400	0	0	0
Class IV	10,200	10,500	10,200	10,200	0

Non-WSA Area	Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Red Desert					
Class I	0	0	0	0	40,700
Class II	1,900	0	10,200	1,900	0
Class III	18,200	0	16,200	18,200	0
Class IV	20,600	40,700	14,300	20,600	0
Rock Canyon					
Class I	0	0	0	0	1,300
Class II	0	0	0	0	0
Class III	0	0	0	0	0
Class IV	1,300	1,300	1,300	1,300	0
Rocky Ford					
Class I	0	0	0	0	6,700
Class II	400	0	400	400	0
Class III	100	0	0	100	0
Class IV	6,200	6,700	6,300	6,200	0
Sweetwater Reef					
Class I	0	0	0	0	6,200
Class II	0	0	0	0	0
Class III	6,200	0	6,200	6,200	0
Class IV	0	6,200	0	0	0
Wild Horse Mesa					
Class I	0	0	0	0	49,700
Class II	18,000	0	18,300	18,500	0
Class III	7,600	0	7,300	7,200	0
Class IV	24,100	49,700	24,100	24,000	0
Wildcat Knolls					
Class I	0	0	0	0	6,700
Class II	0	0	0	0	0
Class III	0	2,300	0	0	0
Class IV	6,700	4,400	6,700	6,700	0

Under Alternative N, 161,265 acres would be managed by VRM Class I and II objectives in all or parts of 17 non-WSA lands with wilderness characteristics areas, protecting the natural character of those lands. Conversely, 521,335 acres would be managed by Class III and IV objectives. While the focus of these VRM objectives is to provide for activities and uses that would change the landscape, this does not mean that every acre would be developed or changed. Thus, in those non-WSA lands managed by Class III and IV objectives, the natural character of the affected non-WSA lands could be lost. If the naturalness of these areas was lost, the opportunities for solitude and primitive recreation would be lost because the setting needed to support these opportunities would be altered.

Impacts from Special Status Species

Alternative N (along with all the other alternatives) includes management actions that focus on maintaining, protecting, and enhancing habitats for SSS. Decisions that could help protect non-WSA lands with wilderness characteristics include prohibiting actions that would destroy, adversely modify, or fragment the habitat of federally listed threatened or endangered species; maintaining the integrity of SSS habitats; and generally retaining habitats for federally listed and candidate species that occur in lands

under federal ownership. These decisions would help to maintain the natural character of non-WSA lands with wilderness characteristics, when they intersect with SSS habitat. Virtually all non-WSA lands with wilderness characteristics have SSS raptors and plants.

Depending on the method used, habitat improvement treatments conducted for SSS could degrade the naturalness of the non-WSA lands. While the habitat manipulation is being conducted, the opportunity for solitude and primitive recreation would be disrupted, and the naturalness of the area could be impaired.

Allowing for the introduction, augmentation, translocation, and transplantation of SSS, if done within non-WSA lands with wilderness characteristics, could enhance the wildlife-viewing opportunities often associated with primitive recreation experiences.

Impacts from Fish and Wildlife

A variety of actions would be implemented to restore, maintain, and enhance wildlife populations. Improved wildlife populations would augment the natural character of the land in all the non-WSA lands with wilderness characteristics. Furthermore, larger and healthier wildlife populations would expand opportunities for primitive and unconfined recreation, including wildlife viewing and hunting. In addition, strategies to avoid or reduce habitat fragmentation, such as collocating facilities, employing directional drilling, and reducing road densities, would be implemented. These strategies would help to maintain the natural character of non-WSA lands with wilderness characteristics, when they intersect with wildlife habitat.

Habitat treatments to meet terrestrial, aquatic, and riparian habitat objectives would be accomplished through the use of prescribed fire and chemical, biological, and mechanical methods. The use of fire or biological and chemical treatments would leave no apparent evidence of human intervention on the landscape. Thus, there would be no noticeable effect on the natural character of the non-WSA lands with wilderness characteristics, if those treatments were necessary in the non-WSA areas that have wilderness characteristics. Restoration of vegetative communities would result in a more natural vegetative community and thus a more natural condition of the non-WSA areas. The use of mechanical treatments for vegetation manipulations would leave a noticeable imprint of human work on the landscape and would degrade the natural character of non-WSA lands, if the treatments were to occur on those lands. Depending on the vegetative community treated (e.g., grassland and shrub land, a woodland or coniferous forest), the length of time that the evidence of mechanical treatments remained on the landscape before the surface and vegetation disturbances returned to a more natural or unmodified condition would vary.

Allowing for the introduction, augmentation, translocation, and transplantation of native or naturalized fish and wildlife species, if done within non-WSA lands with wilderness characteristics, could enhance the wildlife-viewing opportunities often associated with primitive recreation experiences.

The Henry Mountains bison and mule deer range overlays portions of the Mount Ellen—Blue Hills, Ragged Mountain, Mount Pennell, Bull Mountain, and Mount Hillers non-WSA lands with wilderness characteristics. No specific management for the Henry Mountains bison and mule deer habitat area is proposed under Alternative N; therefore, impacts to those non-WSA lands with wilderness characteristics that overlay the habitat cannot be determined.

Impacts from Wild Horses and Burros

The Canyonlands HMA would be managed to maintain herds for genetic viability. The Canyonlands HMA overlaps portions of the Labyrinth Canyon, Horseshoe Canyon South, and Dirty Devil/French Spring non-WSA lands with wilderness characteristics. Maintaining this HMA at existing levels would continue to provide opportunities for viewing of wild burros, which is often associated with primitive recreation experiences.

Impacts from Fire and Fuels Management

BLM would attempt to manage fire and fuels, where appropriate, to restore natural systems to their desired condition, considering the interrelated social and economic components. Restoration of fire to fire-dependent and fire-adapted ecosystems would restore a more natural vegetation community (in both species and composition), watershed conditions, and wildlife populations dependent on those communities. In the short term, a burned landscape may reduce opportunities for primitive recreation. However, in the long-term, a more natural landscape would benefit the natural character of non-WSA lands with wilderness characteristics and would enhance the setting and opportunities for primitive forms of recreation, including hiking, backpacking, hunting, wildlife viewing, and nature study.

The RFO would base its priorities for all aspects of fire management decisions on the General Risk Categories (Appendix 6), to determine where fire is or is not desired. Furthermore, ESR actions would be developed and implemented following any wildland fire event, as appropriate. Fuels treatment and management activities would be consistent with the resource goals and objectives in the Proposed RMP and might include mechanical treatments, manual treatments, prescribed fire, chemical spraying, or biological treatments and seeding.

Setting fire objectives through fire management categories would identify where fire is desired on the land, leading to the same benefits to natural conditions as restoring fire to fire-dependent and fire-adapted ecosystems. When it is necessary to suppress fire in non-WSA lands with wilderness characteristics, developing and implementing the ESR plan would result in restoration of fire suppression-related disturbances (e.g., fire line construction), which would also restore the natural character of the non-WSA areas. Fuels treatments in non-WSA lands with wilderness characteristics would aid in restoration of a more natural fire regime in these lands. The use of fire to accomplish this reduction would be compatible with the natural character of these areas. The use of mechanical treatments would leave an apparent imprint of human work on the land, thus degrading the natural character of the non-WSA lands with wilderness characteristics.

In the short term, fire operations (e.g., aircraft over-flights, fire line construction) would degrade the natural landscape and character of the non-WSA lands with wilderness characteristics. The noise and presence of people, equipment, and operations would also diminish opportunities for solitude and primitive forms of recreation. However, in the long term, surface disturbance associated with the fire treatment would be restored, with little to no net effect on naturalness. The effects of fire operations on opportunities for solitude and primitive recreation would cease, and those opportunities would be restored.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under Alternative N, no specific actions would be prescribed to directly protect the naturalness and opportunities for solitude or primitive recreation of the non-WSA areas, resulting in no specific benefits to non-WSA lands with wilderness characteristics; because there are no prescriptions and technically no non-WSA lands with wilderness characteristics.

Impacts from Forestry and Woodland Products

Permits for commercial timber harvest would be prohibited east of Capitol Reef National Park, thereby protecting from surface-disturbing activities associated with timber harvest the wilderness characteristics within Long Canyon, Bullfrog Creek, Mount Pennell, Dogwater Creek, Notom Bench, Mount Ellen—Blue Hills, Red Desert, Muddy Creek/Crack Canyon, Wild Horse Mesa, Flat Tops, Sweetwater Reef, Labyrinth Canyon, Horseshoe Canyon South, Dirty Devil/French Spring, Fiddler Butte, Little Rockies, Mount Hillers, Ragged Mountain, and Bull Mountain non-WSA lands with wilderness characteristics (where timber resources may exist).

Non-WSA lands with wilderness characteristics that would be at risk for commercial timber harvest activities are within the Fremont Gorge, Jones Bench, Limestone Cliffs, Mussentuchit Badlands, Rock Canyon, Wildcat Knolls, Kingston Ridge, Phonolite Hill, Rocky Ford, and Pole Canyon areas, where timber resources may exist. Activities associated with commercial harvest, such as heavy equipment or chain saw use, construction of new roads, cutting of trees and leaving of stumps and debris, and human activity would diminish the wilderness characteristics values of naturalness, solitude, and primitive recreation opportunities within the areas being harvested.

Permits for non-commercial woodland products (primarily firewood cutting) would continue to be sold to the public in all 20 non-WSA areas east of Capitol Reef National Park. These areas would remain open for wood cutting. Where resources exist, wilderness characteristics might be compromised by surface-disturbing activities such as driving cross-country to the trees or cutting the trunks of trees and leaving stumps and debris, and by affecting the solitude and primitive recreation opportunities through the use of chain saws and surface disturbances associated with human activity.

Commercial live plant and seed collection would be allowed in all 29 non-WSA lands with wilderness characteristics areas. If permits were sold within the non-WSA lands, this activity could affect the natural character of these areas because of cross-country OHV travel to the specific areas of collection. This travel would crush vegetation and compact soil, and could lead to proliferation of new OHV routes in OHV open areas. In addition, surface disturbance associated with live plant collection could leave unnatural holes in the ground (from digging up plant roots). Temporary impacts associated with human activity and potential presence of mechanized equipment would affect solitude and primitive recreation opportunities while the collection crews were in the non-WSA areas.

Impacts from Livestock Grazing

Livestock grazing is guided by objectives set in the *Fundamentals of Rangeland Health* and *Standards and Guidelines for Grazing Administration*. Appropriate levels of livestock use are guided by these objectives. Thus, it is not anticipated that livestock grazing would have impacts on non-WSA lands with wilderness characteristics because meeting these objectives would not permit degradation of the lands. When livestock use is properly managed, it does not affect the appearance of naturalness. Grazing assessments completed by RFO staff and any subsequent actions taken to remedy impending issues would enhance the natural character of non-WSA lands with wilderness characteristics. Furthermore, improved natural conditions would sustain the setting needed to support opportunities for primitive and unconfined recreation and the experience of solitude that visitors seek.

Although there could be some visual evidence of livestock use in the areas (presence of livestock, feces, trampling of soil, fences, and consumption of vegetation), rangeland health and riparian conditions would be maintained through proper management to meet or maintain SRH and the implementation of *Guidelines for Grazing Management*, and the appearance of natural condition in these areas would continue. For some visitors, the presence of livestock would be an adverse impact on the desired experience (connection with the natural world and experiences of solitude). However, this effect would be seasonal. At other times of the year livestock would not be present, soils would recover and vegetation would regrow, reducing the impact on the visitor.

Impacts from Recreation

The decision to limit or control activities where long-term damage is observed or anticipated would help protect the naturalness values of wilderness characteristics under all alternatives. Such control could be implemented by designating campsites, providing permits, closing areas, or limiting the numbers of users and duration of usage in these areas. In addition, encouraging the location of public land recreational activities near population centers and highway corridors would help to maintain the naturalness of the more-remote lands with wilderness characteristics.

ERMAs

No specified management for ERMAs are described under Alternative N. Therefore wilderness characteristics values could be affected by any number of recreational activities in any of the non-WSA lands with wilderness characteristics.

SRMAs

Under Alternative N, no SRMAs that overlay non-WSA lands with wilderness characteristics would be established. Therefore there would be no impacts to wilderness characteristics because of SRMAs. Recreation activities would continue without the focused management provided by the establishment of SRMAs. Impacts from cross-county OHV use and other recreational surface-disturbing activities would affect naturalness and opportunities for solitude and primitive recreation.

Impacts from Travel Management

Cross-country motorized vehicle travel would adversely impact lands with wilderness characteristics by reducing opportunities for solitude and primitive recreation (through the presence and noise of machines) and by directly impacting soils and vegetation, which are elements of naturalness. Table 4-24 shows the OHV area designations by alternative within the non-WSA lands with wilderness characteristics.

Table 4-24. OHV Management in Non-WSA Lands with Wilderness Characteristics

OHV Area Designations in Non-WSA Lands with Wilderness Characteristics			Alternative				
Non-WSA Area Name	Acres	OHV Category	N (No Action)	A	Proposed RMP	C	D
Bull Mountain	3,800	Open	3,800	0	0	0	0
		Limited	0	3,800	3,800	3,800	0
		Closed	0	0	0	0	3,800
Bullfrog Creek	33,700	Open	33,700	0	0	0	0
		Limited	0	33,700	33,700	33,700	0
		Closed	0	0	0	0	33,700
Dirty Devil/French Spring	133,100	Open	122,200	13,100	0	0	0
		Limited	0	120,000	105,600	73,100	0
		Closed	10,900	0	27,500	60,000	133,100
Dogwater Creek	3,500	Open	3,500	0	0	0	0
		Limited	0	3,500	3,500	3,500	0
		Closed	0	0	0	0	3,500
Fiddler Butte	19,700	Open	19,700	200	0	0	0
		Limited	0	19,500	19,700	7,700	0
		Closed	0	0	0	12,000	19,700
Flat Tops	23,000	Open	23,000	200	0	0	0
		Limited	0	22,800	23,000	23,000	0
		Closed	0	0	0	0	23,000
Fremont Gorge	16,000	Open	14,200	10,900	0	0	0
		Limited	0	5,100	14,500	9,300	0
		Closed	1,800	0	1,500	6,700	16,000
Horseshoe Canyon South	20,600	Open	20,600	0	0	0	0
		Limited	0	20,600	20,500	17,700	0
		Closed	0	0	100	2,900	20,600

OHV Area Designations in Non-WSA Lands with Wilderness Characteristics			Alternative				
Non-WSA Area Name	Acres	OHV Category	N (No Action)	A	Proposed RMP	C	D
Jones Bench	3,300	Open	3,300	0	0	0	0
		Limited	0	3,300	3,300	3,300	0
		Closed	0	0	0	0	3,300
Kingston Ridge	10,200	Open	10,200	2,900	0	0	0
		Limited	0	7,300	10,200	10,200	0
		Closed	0	0	0	0	10,200
Labyrinth	12,300	Open	12,300	0	0	0	0
		Limited	0	12,300	12,300	12,300	0
		Closed	0	0	0	0	12,300
Limestone Cliffs	24,800	Open	24,800	0	0	0	0
		Limited	0	24,800	24,800	24,400	0
		Closed	0	0	0	400	24,800
Little Rockies	23,200	Open	19,500	200	0	0	0
		Limited	3,700	23,000	23,200	19,600	0
		Closed	0	0	0	3,600	23,200
Long Canyon	16,600	Open	16,600		0	0	0
		Limited	0	16,600	16,600	16,600	0
		Closed	0	0	0	0	16,600
Mount Ellen—Blue Hills	49,800	Open	45,000	21,400	0	0	0
		Limited	800	28,400	49,400	41,600	0
		Closed	4,000	0	400	8,200	49,800
Mount Hillers	1,800	Open	1,800	0	0	0	0
		Limited	0	1,800	1,800	1,800	0
		Closed	0	0	0	0	1,800
Mount Pennell	65,600	Open	64,600	0	0	0	0
		Limited	0	65,600	65,600	20,300	0
		Closed	1,000	0	0	45,300	65,600
Muddy Creek/Crack Canyon	61,800	Open	58,000	61,800	5,700	0	0
		Limited	0	0	51,400	41,600	0
		Closed	3,800	0	4,700	20,200	61,800
Mussentuchit Badlands	700	Open	700	0	0	0	0
		Limited	0	700	700	700	0
		Closed	0	0	0	0	700
Notom Bench	8,000	Open	8,000	0	0	0	0
		Limited	0	8,000	8,000	8,000	0
		Closed	0	0	0	0	8,000
Phonolite Hill	7,900	Open	7,900	7,700	0	0	0
		Limited	0	200	7,900	7,900	0
		Closed	0	0	0	0	7,900
Pole Canyon/Hunter Spring	6,000	Open	5,500	4,400	0	0	0
		Limited	500	1,600	6,000	6,000	0
		Closed	0	0	0	0	6,000
Ragged Mountain	25,900	Open	25,900	0	0	0	0

OHV Area Designations in Non-WSA Lands with Wilderness Characteristics			Alternative				
Non-WSA Area Name	Acres	OHV Category	N (No Action)	A	Proposed RMP	C	D
		Limited	0	25,900	25,900	500	0
		Closed	0	0	0	25,400	25,900
Red Desert	40,700	Open	40,700	40,700	0	0	0
		Limited	0	0	40,700	40,700	0
		Closed	0	0	0	0	40,700
Rock Canyon	1,300	Open	1,300	0	0	0	0
		Limited	0	1,300	1,300	1,300	0
		Closed	0	0	0	0	1,300
Rocky Ford	6,700	Open	6,700	6,700	0	0	0
		Limited	0	0	6,700	6,700	0
		Closed	0	0	0	0	6,700
Sweetwater Reef	6,200	Open	6,200	1,900	0	0	0
		Limited	0	4,300	6,200	6,200	0
		Closed	0	0	0	0	6,200
Wild Horse Mesa	49,700	Open	49,700	49,700	0	0	0
		Limited	0	0	49,700	25,200	0
		Closed	0	0	0	24,500	49,700
Wildcat Knolls	6,700	Open	6,700	0	0	0	0
		Limited	0	6,700	6,700	6,400	0
		Closed	0	0	0	300	6,700

Under Alternative N, 1,636,400 acres of the RFO would be open to cross-country travel, meaning that no restrictions would be placed on cross-country motorized use for game retrieval, use off of designated routes for the purposes of parking or staging, or motorized access to campsites. The RFO also has the discretion to authorize cross-country travel for any commercial or organized group events. These actions would continue to degrade the natural character of the non-WSA lands with wilderness characteristics by allowing new surface-disturbing activity from motorized vehicles. The sights and sounds of vehicle travel would also conflict with solitude and primitive recreation experiences.

Current management designates 656,100 acres (96%) of the 29 non-WSA lands with wilderness characteristic areas as open to cross-country travel. Cross-country motorized travel in these non-WSA lands would result in surface disturbance to soils and vegetation, altering the landscape and diminishing the natural character of these non-WSA lands. Furthermore, the presence and noise of motorized vehicles would degrade a visitor's opportunity for solitude and would conflict with opportunities for primitive and unconfined recreation activities.

Under Alternative N, OHV use is limited to designated routes in 5,000 acres (1%) within 3 of the 29 non-WSA lands with wilderness characteristics. In these areas, 51.2 miles of routes would be designated (Table 4-25).

Table 4-25. OHV Route Designations in Non-WSA Lands with Wilderness Characteristics, Alternative N

Non-WSA Area Name	Miles of Routes
Little Rockies	7.8 miles
Mount Ellen—Blue Hills	30.4 miles
Pole Canyon/Hunter Spring	13 miles

Limiting OHV use would confine to existing routes the soil and vegetation disturbance caused by motor vehicles, and would result in no additional change to the natural character of the non-WSA lands. However, the presence and noise of vehicles using these routes would reduce the opportunity of visitors to find solitude in the non-WSA areas, especially in proximity to the routes. Motorized uses would conflict with primitive and unconfined recreation opportunities sought in the non-WSA areas.

Currently, 21,500 acres (3%) within 5 of the 29 non-WSA lands with wilderness characteristics areas are closed to OHV use (Table 4-26).

Table 4-26. Acres Closed to OHVs in Non-WSA Lands with Wilderness Characteristics, Alternative N

Non-WSA Area Name	Closed Acres
Dirty Devil/French Spring	10,900 acres
Fremont Gorge	1,800 acres
Mount Ellen—Blue Hills	4,000 acres
Mount Pennell	1,000 acres
Muddy Creek/Crack Canyon	3,800 acres

Because these areas are closed, no routes would be designated so surface disturbance caused by motorized travel and the resultant impacts to the natural character of the non-WSA areas would not occur. Furthermore, the opportunities for conflict between primitive forms of recreation and motorized uses in these areas would not occur. The natural character and opportunities for solitude and primitive recreation of these non-WSA areas would be unaffected by OHV travel.

OHV open areas near communities would be considered and encouraged for leasing under authority of the Recreation and Public Purposes Act (R&PP), to allow local management of OHV play areas. Generally these areas would include previously disturbed areas and would be considered on a case-by-case basis. If an R&PP open area was leased and overlapped non-WSA areas, the action would continue to degrade the natural character of the non-WSA lands with wilderness characteristics by allowing the surface-disturbing activity from motorized vehicles to continue. The sights and sounds of vehicle travel would also conflict with solitude and primitive recreation experiences.

Impacts from Lands and Realty

Land Tenure Adjustments

Land tenure adjustments (except for FLPMA Section 203 land sales) would be considered if they met the specific criteria outlined in Chapter 2. Non-WSA lands with wilderness characteristics could be disposed of if there is public demand for any of these lands and if they meet the land disposal criteria. If disposed

of, the lands would be outside of BLM's management control and protection of wilderness characteristics could be foregone.

Alternative N identifies no lands as available for FLPMA land sales within non-WSA lands with wilderness characteristics, resulting in no impacts to non-WSA lands.

Withdrawals

Under Alternative N, there are no existing or recommended withdrawals within non-WSA lands with wilderness characteristics. The non-WSA lands would be open to location and entry under the mining laws, new mining claims could be filed at any time, and new proposals for exploration and development could be submitted and reviewed under the surface management regulations for undue and unnecessary degradation. Therefore, the non-WSA lands could be impacted by denuding the naturalness and by creating loss of primitive recreation activities and solitude for those areas in which new mining activities might occur. If new mining development does occur within these areas, direct loss of wilderness characteristics would be unavoidable because of the major surface-disturbing activities associated with mining activities.

Rights-of-Way and Other Land Use Authorizations

No ROW corridors are proposed under Alternative N.

Non-WSA lands with wilderness characteristics that would remain open to granting of ROWs include all of 21 areas and portions of 8 areas, totaling 658,697 acres. Any surface-disturbing activity or placement of permanent facilities would detract from the natural character of the area and would disrupt the setting needed to support primitive forms of recreation.

Under Alternative N, 23,903 acres in eight non-WSA lands with wilderness characteristics areas would be protected, in part, from surface-disturbing actives because they would be within ROW avoidance areas (Table 4-27). Portions of the Dirty Devil/French Spring, Flat Tops, Fremont Gorge, Little Rockies, Mount Ellen—Blue Hills, Muddy Creek/Crack Canyon, Red Desert, and Wildcat Knolls non-WSA lands with wilderness characteristics would be within the ROW avoidance areas. These areas would be avoided but might be available for location of ROWs with special stipulations if the proposal meets the goals and objectives of other resources and uses in the LUP. It is expected and assumed that the avoidance areas would protect the natural character of the non-WSA lands in these areas.

Table 4-27. Acres of Avoidance or Exclusion for ROWs in Non-WSA Lands with Wilderness Characteristics

Name of Non-WSA Land with Wilderness Characteristics	Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D (all acres are exclusion areas)
Bull Mountain	0	0	0	2,821	3,800
Bullfrog Creek	0	0	0	0	33,700
Dirty Devil/French Spring	8,495	0	63,600	69,912	133,100
Dogwater Creek	0	0	3,100	3,438	3,500
Fiddler Butte	0	0	0	17,283	19,700
Flat Tops	3	0	3	12	23,000

Name of Non-WSA Land with Wilderness Characteristics	Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D (all acres are exclusion areas)
Fremont Gorge	2,230	6	1,500	15,941	16,000
Horseshoe Canyon South	0	0	13,680	3,310	20,600
Jones Bench	0	0	2,600	43	3,300
Kingston Ridge	0	0	0	2,126	10,200
Labyrinth Canyon	0	0	2,800	1	12,300
Limestone Cliffs	0	0	2	387	24,800
Little Rockies	8,116	0	9,500	15,596	23,200
Long Canyon	0	0	0	0	16,600
Mount Ellen—Blue Hills	165	0	4,100	33,981	49,800
Mount Hillers	0	0	0	1,758	1,800
Mount Pennell	0	0	4,600	52,217	65,600
Muddy Creek/Crack Canyon	4,037	0	3,800	17,735	61,800
Mussentuchit Badlands	0	0	0	0	700
Notom Bench	0	0	7,800	7,968	8,000
Phonolite Hill	0	0	0	7,900	7,900
Pole Canyon/Hunter Spring	0	0	0	0	6,000
Ragged Mountain	0	0	7,900	24,408	25,900
Red Desert	728	0	8,900	2,296	40,700
Rock Canyon	0	0	0	0	1,300
Rocky Ford	0	0	0	6,429	6,700
Sweetwater Reef	0	0	0	0	6,200
Wild Horse Mesa	0	0	8,700	26,375	49,700
Wildcat Knolls	129	0	0	231	6,700
Total Acres of Avoidance and Exclusion Areas	**23,903**	**6**	**142,500**	**312,168**	**682,600**
Total Acres Open for ROWs	**658,697**	**682,594**	**540,100**	**370,432**	**0**

The RFO would be available for other land use authorizations (such as film permits, leases, and easements) if the use associated with an authorization was compatible with other decisions throughout the Proposed RMP. Activities authorized under a permit, lease, or easement would need to be in conformance with OHV area designations, VRM management classes, and so forth. It is difficult to speculate where these activities might occur and what the proposed activity would entail. If the proposal was for a

minimally impactful activity, it is likely that no impacts to wilderness characteristics would occur from that activity. However, if the proposed activity involved ground disturbance and use of motorized vehicles, then wilderness characteristics would likely be affected, thus impacting naturalness of the area and creating loss of primitive recreation activities and solitude.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Lands open to leasing within non-WSA lands with wilderness characteristics (Table 4-28) and existing leases are discussed in the area-by-area analysis. Exploration and development activities could impact wilderness characteristics through the direct disturbance of natural terrain, consequently impacting solitude and opportunities for primitive recreation. Virtually all the lands with wilderness characteristics would be open to leasing under Alternative N.

Table 4-28. Non-WSA Lands with Wilderness Characteristics and Leasing Stipulations, by Alternative

Area Name	Total Acres	Currently Leased	Stipulation	Alt. N (No Action)	Alt. A	Proposed RMP	Alt. C	Alt. D
Bull Mountain	3,800	0	Standard	3,300	1,000	1,000	1,000	0
			TL, CSU	500	2,800	2,800	2,800	0
			NSO	0	0	0	0	0
			Closed	0	0	0	0	3,800
Bullfrog Creek	33,700	0	Standard	33,700	33,700	26,200	33,700	0
			TL, CSU	0	0	7,500	0	0
			NSO	0	0	0	0	0
			Closed	0	0	0	0	33,700
Dirty Devil/ French Spring	133,100	30,099	Standard	120,400	22,200	22,000	22,100	0
			TL, CSU	11,700	110,900	47,600	48,500	0
			NSO	0	0	63,500	34,900	0
			Closed	1,000	0	0	27,600	133,100
Dogwater Creek	3,500	0	Standard	3,000	0	0	0	0
			TL, CSU	500	3,500	400	0	0
			NSO	0	0	3100	3,500	0
			Closed	0	0	0	0	3,500
Fiddler Butte	19,700	0	Standard	18,200	11,700	9,900	2,400	0
			TL, CSU	1,500	8,000	9,800	0	0
			NSO	0	0	0	9,100	0
			Closed	0	0	0	8,200	19,700
Flat Tops	23,000	21,202	Standard	23,000	23,000	23,000	23,000	0
			TL, CSU	0	0	0	0	0
			NSO	0	0	0	0	0
			Closed	0	0	0	0	23,000
Fremont Gorge	16,000	0	Standard	10,900	0	0	0	0
			TL, CSU	2,900	16,000	14,500	13,000	0
			NSO	2,200	0	0	1,500	0
			Closed	0	0	1500	1,500	16,000
Horsesho	20,600	0	Standard	20,600	0	0	0	0

Area Name	Total Acres	Currently Leased	Stipulation	Alt. N (No Action)	Alt. A	Proposed RMP	Alt. C	Alt. D
e Canyon South			TL, CSU	0	20,600	7,100	17,300	0
			NSO	0	0	13,500	3,300	0
			Closed	0	0	0	0	20,600
Jones Bench	3,300	0	Standard	2,400	1,900	100	1,700	0
			TL, CSU	900	1,400	600	1,600	0
			NSO	0	0	2600	0	0
			Closed	0	0	0	0	3,300
Kingston Ridge	10,200	0	Standard	6,000	10,200	100	0	0
			TL, CSU	4,200	0	10,100	10,200	0
			NSO	0	0	0	0	0
			Closed	0	0	0	0	10,200
Labyrinth Canyon	12,300	0	Standard	12,300	0	0	0	0
			TL, CSU	0	12,300	9,400	12,300	0
			NSO	0	0	2,900	0	0
			Closed	0	0	0	0	12,300
Limestone Cliffs	24,800	0	Standard	17,400	300	100	0	0
			TL, CSU	7,400	24,500	24,700	24,800	0
			NSO	0	0		0	0
			Closed	0	0	0	0	24,800
Little Rockies	23,200	0	Standard	12,900	20,200	9,600	7,600	0
			TL, CSU	2,200	3,000	4,100	0	0
			NSO	100	0	9,500	15,200	0
			Closed	8,000	0	0	400	23,200
Long Canyon	16,600	0	Standard	16,600	16,600	14,600	16,600	0
			TL, CSU	0	0	2,000	0	0
			NSO	0	0	0	0	0
			Closed	0	0	0	0	16,600
Mount Ellen—Blue Hills	49,800	0	Standard	36,600	31,800	27,700	16,000	0
			TL, CSU	13,000	18,000	17,900	16,000	0
			NSO	200	0	4,200	9,000	0
			Closed	0	0	0	8,800	49,800
Mount Hillers	1,800	0	Standard	1,700	0	0	0	0
			TL, CSU	100	1,800	1,800	700	0
			NSO	0	0	0	1,100	0
			Closed	0	0	0	0	1,800
Mount Pennell	65,600	0	Standard	61,900	20,000	16,800	13,200	0
			TL, CSU	3,700	45,600	44,100	34,500	0
			NSO	0	0	4,700	17,400	0
			Closed	0	0	0	500	65,600
Muddy Creek/ Crack Canyon	61,800	0	Standard	36,800	61,800	51,100	32,900	0
			TL, CSU	21,500	0	6,800	11,200	0
			NSO	3,500	0	3,900	17,700	0
			Closed	0	0	0	0	61,800
Mussentuchit	700	0	Standard	700	650	600	0	0
			TL, CSU	0	50	100	700	0

Area Name	Total Acres	Currently Leased	Stipulation	Alt. N (No Action)	Alt. A	Proposed RMP	Alt. C	Alt. D
Badlands			NSO	0	0	0	0	0
			Closed	0	0	0	0	700
Notom Bench	8,000	0	Standard	6,400	100	0	0	0
			TL, CSU	1,600	7,900	200	0	0
			NSO	0	0	7,800	8,000	0
			Closed	0	0	0	0	8,000
Phonolite Hill	7,900	0	Standard	4,800	6,200	600	0	0
			TL, CSU	3,100	1,700	7,300	6,900	0
			NSO	0	0	0	1,000	0
			Closed	0	0	0	0	7,900
Pole Canyon/ Hunter Spring	6,000	0	Standard	5,600	0	0	0	0
			TL, CSU	400	6,000	6,000	6,000	0
			NSO	0	0	0	0	0
			Closed	0	0	0	0	6,000
Ragged Mountain	25,900	0	Standard	15,400	1,500	1,400	1,500	0
			TL, CSU	10,500	24,400	16,500	9,000	0
			NSO	0	0	8,000	0	0
			Closed	0	0	0	15,400	25,900
Red Desert	40,700	0	Standard	39,700	1,200	1,200	900	0
			TL, CSU	1,000	39,500	30,700	37,500	0
			NSO	0	0	8,800	1,300	0
			Closed	0	0	0	1,000	40,700
Rock Canyon	1,300	0	Standard	1,300	1,300	700	0	0
			TL, CSU	0	0	600	1,300	0
			NSO	0	0	0	0	0
			Closed	0	0	0	0	1,300
Rocky Ford	6,700	0	Standard	3,900	4,000	0	0	0
			TL, CSU	2,800	2,700	6,700	6,300	0
			NSO	0	0	0	400	0
			Closed	0	0	0	0	6,700
Sweetwater Reef	6,200	195	Standard	6,200	6,200	6,200	6,200	0
			TL, CSU	0	0	0	0	0
			NSO	0	0	0	0	0
			Closed	0	0	0	0	6,200
Wild Horse Mesa	49,700	80	Standard	49,400	49,700	38,600	23,300	0
			TL, CSU	300	0	2,300	0	0
			NSO	0	0	8,800	0	0
			Closed	0	0	0	26,400	49,700
Wildcat Knolls	6,700	0	Standard	6,700	4,400	500	0	0
			TL, CSU	0	2,300	6,200	6,500	0
			NSO	0	0	0	0	0
			Closed	0	0	0	200	6,700

The mineral assumptions for analysis and the RFD scenarios were used in the analysis of impacts to non-WSA lands with wilderness characteristics. The *Mineral Potential Report* (BLM 2005b) for the RFO describes the oil and gas occurrence potential and serves as the basis for the RFD. The RFD assumes that all potentially productive areas, except those areas designated as closed to leasing by law, regulations, or EO, are open to leasing subject to the standard terms and conditions. In the RFO, non-WSA lands with wilderness characteristics fall within two RFD areas.

The largest RFD area (Areas 1 and 2 of the RFD Report) incorporates the majority of non-WSA lands with wilderness characteristics (24 areas). This RFD area includes all of the lands in Piute, Wayne, and Garfield Counties within the Richfield planning area. These non-WSA areas total 645,800 acres within the 2,618,000 acres of this RFD area, or 25% of the RFD area (Table 4-29). This acreage does not include the acres closed to leasing by law, regulation, or EO (including WSAs and NPS lands, among others). The RFD scenario for oil and gas development in this RFD area predicts that during the next 15 years, approximately 45 exploratory wells (or 3 wells per year) would disturb a total of 540 acres (12 acres per well), and an additional 240 acres would be minimally disturbed by geophysical operations. There are four non-WSA areas with existing leases that total 51,510 acres. Most notable is the Flat Tops non-WSA area, which has 92% of its lands under existing leases.

Table 4-29. Non-WSA Lands with Wilderness Characteristics in Piute, Wayne, and Garfield Counties within RFD Areas 1 and 2

Name of Non-WSA Lands With Wilderness Characteristics Area	Percent of RFD Areas 1 and 2	Acres of Non-WSA Lands with Existing Leases (Percent Leased)
Bull Mountain	<1 %	0
Bullfrog Creek	1 %	0
Dirty Devil/French Spring	5 %	30,099 (23%)
Dogwater Creek	<1 %	0
Fiddler Butte	<1 %	0
Flat Tops	1 %	21,202 (92%)
Fremont Gorge	<1 %	0
Horseshoe Canyon South	1 %	0
Kingston Ridge	<1 %	0
Labyrinth Canyon	<1 %	0
Little Rockies	1 %	0
Long Canyon	<1 %	0
Mount Ellen—Blue Hills	2 %	0
Mount Hillers	<1 %	0
Mount Pennell	2.5 %	0
Muddy Creek/Crack Canyon	2.5 %	0
Notom Bench	<1 %	0
Phonolite Hill	<1 %	0
Pole Canyon/Hunter Spring	<1 %	0
Ragged Mountain	1 %	0

Name of Non-WSA Lands With Wilderness Characteristics Area	Percent of RFD Areas 1 and 2	Acres of Non-WSA Lands with Existing Leases (Percent Leased)
Red Desert	1.5 %	0
Rocky Ford	<1 %	0
Sweetwater Reef	<1 %	195 (3%)
Wild Horse Mesa	2 %	80 (<1%)

The other RFD area (Area 3 of the RFD Report) incorporates the remaining five non-WSA lands with wilderness characteristics (Wildcat Knolls, Rock Canyon, Mussentuchit Badlands, Limestone Cliffs, and Jones Bench), in Sevier County. These non-WSA areas total 36,800 acres within the 702,400 acres of this RFD area, or about 5% of the RFD area (Table 4-30). The RFD scenario for oil and gas activity in RFD Area 3 predicts that during the next 15 years, approximately 49 exploratory wells (or about 3 wells per year) would disturb a total of 1,100 acres (22 acres per well), and an additional 360 acres would be minimally disturbed by geophysical operations. There are no existing leases within the five non-WSA areas.

Table 4-30. Non-WSA Lands with Wilderness Characteristics in Sevier County within RFD Area 3

Name of Non-WSA Lands With Wilderness Characteristics Area	Percent of RFD Area 3	Acres of Non-WSA Lands with Existing Leases
Jones Bench	<1 %	0
Limestone Cliffs	3.5 %	0
Mussentuchit Badlands	<1 %	0
Rock Canyon	<1 %	0
Wildcat Knolls	1 %	0

A number of variables would determine the degree of impact to non-WSA lands with wilderness characteristics. These variables would include where surface-disturbing activities occur, landform or topography, vegetation type, oil and gas potential (as determined by exploration), sequence of exploration and development, and reclamation time. Soil types and climate would affect the time needed to reclaim disturbances.

Construction and operation of oil and gas wells and associated support facilities (including roads, surface and buried pipelines, power lines, and compressor stations) would create soil and vegetation disturbance and the presence of permanent structures that would degrade the naturalness and opportunities for primitive recreation and solitude of non-WSA lands with wilderness characteristics. In addition to site-specific surface disturbance, the cumulative number of wells would change the appearance of naturalness.

The noise of construction and drilling wells, as well as the presence of work crews, vehicles, and equipment, would degrade opportunities for solitude and would conflict with primitive recreational opportunities in proximity to these activities. Such activities could affect wildlife distribution in addition to creating physical disturbances on the ground. As recreational visitors seeking solitude move away from the oil and gas activity, the sights and sounds of activity would diminish. If oil and gas is discovered, then

the oil and gas activity would be longer term. However, it can be expected that sights and sounds from exploration and development would reduce opportunities for solitude and primitive and unconfined recreation up to one-half mile beyond the area of surface disturbance and direct loss of natural character.

The RFD for combined Areas 1 and 2 and for Area 3 is 45 wells and 49 wells, respectively. Although a wildcat well could discover producible oil or gas, the RFD addresses wells without a prediction of production. Thus, the RFD is for well pads and access, not necessarily for facilities needed for production.

Under Alternative N, all or portions of the 29 non-WSA lands with wilderness characteristics areas would remain open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU). There are 682,600 acres of non-WSA lands with wilderness characteristics within the RFD areas. Of these, 667,600 acres are open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU). This acreage comprises about 98% of non-WSA areas. Two percent (15,000 acres) of the non-WSA lands with wilderness characteristics, spread between five areas, would be open to leasing subject to major constraints (NSO) or would be closed to leasing.

In RFD Areas 1 and 2, all or portions of 24 non-WSA lands with wilderness characteristics areas would remain open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU). There are 645,800 acres of non-WSA lands with wilderness characteristics within this combined RFD area. Of these, 630,800 acres are open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU). The other 15,000 acres are either closed to leasing or open to leasing subject to major constraints (NSO): 1,000 acres (1%) in Dirty Devil/French Spring; 8,100 acres (35%) in Little Rockies; 2,200 acres (14%) in Fremont Gorge; 200 acres (less than 1%) in Mount Ellen—Blue Hills; and 3,500 acres (6%) in Muddy Creek/Crack Canyon. There would be no waivers, exceptions, or modifications to the NSO stipulation under Alternative N.

Currently, the Flat Tops and Dirty Devil/Crack Canyon non-WSA areas contain the greatest percentage of leased non-WSA lands with wilderness characteristics. As stated previously, the projection for drilling for oil and gas is 45 wells during the 15-year RFD scenario. Under Alternative N, the non-WSA lands with wilderness characteristics in which surface-disturbing activities associated with oil and gas exploration would be allowed would comprise 24% of the RFD area. Assuming that the predicted wells are evenly distributed in the RFD area, then one-fourth of the predicted RFD of three wells per year—one well per year, or 15 wells during a 15 year period—could be drilled within any of these non-WSA areas. This drilling could disturb as much as 12 acres per year, or as much as 180 acres over the life of the plan. Leasing and subsequent exploration within these non-WSA areas would cause that portion of the non-WSA area to lose its natural character and opportunities for solitude and primitive recreation because of exploration for and development of oil and gas resources. However, it is not anticipated that any of these non-WSA areas would lose their wilderness characteristics in totality because of the small amount of acreage projected to be disturbed and the number of projected wells in this RFD area during the 15-year scenario.

In RFD Area 3, all five non-WSA lands with wilderness characteristics areas would remain open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU). There are 36,800 acres of non-WSA lands with wilderness characteristics in the RFD area. Given that the projection for drilling for oil and gas is 3 wells per year for the entire RFD area, and that only 5% of the RFD area encompasses non-WSA lands with wilderness characteristics areas, then 2 of the 49 wells (i.e., 5% of 49) would be drilled within the five non-WSA lands with wilderness characteristics during the 15-year RFD scenario. This drilling could disturb as much as 44 acres in the non-WSA lands over the life of the Proposed RMP. Given the size of the Limestone Cliffs non-WSA area, the two wells projected on non-WSA lands are assumed most likely to be within this area. However, the area represents

only 3.5% of the entire RFD area. Exploration and development within these non-WSA areas would cause that portion to lose its natural character and opportunities for solitude and primitive recreation because of exploration for and development of oil and gas resources. However, it is not anticipated that any of the areas would lose their wilderness characteristics in totality because of the small amount of acreage projected to be disturbed and the number of projected wells in this RFD area during the 15-year scenario.

Geophysical exploration activities would be authorized for all non-WSA lands with wilderness characteristics, subject to oil and gas leasing categories. Geophysical activities would have short-term, minimal impacts on naturalness because of crushed vegetation, tire tracks, and small drill holes and their cuttings. The presence of equipment, humans, noise, and work associated with geophysical exploration activities would impact solitude and primitive recreation opportunities in the short term. When the geophysical activity ceased, solitude and primitive recreation opportunities would resume and disturbances to the naturalness would be restored in the short term.

Leasable Minerals—Geothermal

About two-thirds of the Kingston Ridge non-WSA lands with wilderness characteristics area overlies a high-potential area for geothermal resources. Under Alternative N, this non-WSA area remains open for geothermal leasing, either open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU). If the area was leased and developed, impacts to the wilderness value would occur. Loss of naturalness and opportunities for solitude and primitive recreation would result from drilling activities, pipeline development, road construction, power plants, and other infrastructure.

Leasable Minerals—Coal

Coal resources suitable for leasing are within the Henry Mountains coal field and underlie portions of the Mount Pennell, Wild Horse Mesa, and Mount Ellen—Blue Hills non-WSA lands with wilderness characteristics areas. This coal field includes both surface and subsurface coal resources. Other coal resources suitable for leasing are within the Emery coal field and include the Limestone Cliffs and Rock Canyon non-WSA lands with wilderness characteristics areas. All this coal has been determined suitable for subsurface coal mining only.

All non-WSA lands with wilderness characteristics underlain by coal resources suitable for leasing could potentially be leased and mined, pending a leasing EIS and further analysis. If leased, 4,925 acres in the Mount Ellen—Blue Hills non-WSA lands; 4,930 acres in the Mount Pennell non-WSA lands; and 82 acres in Wild Horse Mesa non-WSA lands could be available for leasing by surface mining methods. Surface mining for the coal resources would entail strip mining operations. The naturalness of those areas within the mining operations would be foregone, as vegetation would be stripped, soil and earth removed, and the coal resources mined. Heavy equipment and infrastructure support for mining operations, as well as motorized equipment noise and human activity, would degrade, if not preclude, opportunities for solitude and primitive recreation within those immediate areas. As much as 10% of the Mount Ellen—Blue Hills non-WSA area, 8% of the Mount Pennell non-WSA area, and less than 1% of the Wild Horse Mesa non-WSA area could forego their wilderness characteristics if the total surface coal resource was mined.

In addition to the surface coal resource, both Mount Pennell and Mount Ellen—Blue Hills have subsurface coal resources found suitable for mining. If leased, an additional 4,980 acres in the Mount Ellen—Blue Hills non-WSA area and 25,200 acres in the Mount Pennell non-WSA area could be available for leasing by subsurface mining methods. In the Emery coal field, underground coal resources suitable for leasing by underground mining methods encompass 3,970 acres in the Limestone Cliffs and

64 acres in the Rock Canyon non-WSA lands with wilderness characteristics. Subsurface mining for the coal resources would entail surface disturbance associated with portals, ventilation shafts, access roads, and other necessary facilities and infrastructure. None of these disturbances would be large scale or would encompass many acres. The naturalness in these disturbed areas would be impacted, but to a much smaller extent than through surface mining operations. The most significant impact would be caused by access roads. In addition, opportunities for solitude and primitive recreation would be foregone within these areas. It is important to note that although extensive acreage could be leased and mined for underground coal resources, relatively minor surface impacts would occur compared to surface-mining impacts.

Exploration activities for coal resources could be authorized within any of the non-WSA lands with wilderness characteristics. These activities could include the use of cross-county travel with drilling rigs and field crews, for not more than 2 years in an identified area. This travel could cause tracks from motorized use, crushed vegetation and compacted soil, and other surface disturbances. Pad construction might be an outcome of deep drilling. However, this disturbance would be temporary and reclamation would be required during the time that the exploratory activities occurred. Opportunities for solitude and primitive recreation would be affected in the short term, and naturalness would be impacted until the area was reclaimed.

Non-Energy Solid Leasable Minerals

Non-energy solid leasable minerals would be under the same restrictions as oil and gas resources. The same non-WSA lands with wilderness characteristics that would be open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU) would be available for exploration and development. Similarly, those non-WSA lands that would be closed to leasing or open to leasing subject to major constraints (NSO) would be unavailable for exploration and development (Table 4-28). The non-WSA lands with wilderness characteristics that would have the greatest potential for sodium or potassium occurrence are within portions of the Labyrinth Canyon, Horseshoe Canyon South, and Dirty Devil/French Spring areas. Where mining these resources would occur, impacts to wilderness characteristics would include drilling, road construction, evaporation ponds, human activities, and other necessary infrastructure. These impacts would degrade the wilderness characteristics through loss of naturalness and opportunities for primitive recreation and solitude.

Locatable Minerals

All 29 non-WSA lands with wilderness characteristics areas are located within high-potential areas for uranium and vanadium. Existing mining claims as of May 2007 have been located within the Mount Pennell, Mount Hillers, Bull Mountain, Ragged Mountain, Little Rockies, Dirty Devil/French Spring, Wild Horse Mesa, Muddy Creek/Crack Canyon, Mount Ellen—Blue Hills, Fremont Gorge, Rock Canyon, Limestone Cliffs, and Kingston Ridge areas. As of May 2007, recent mining-related activity had caused no surface-disturbing actions within the non-WSA lands. If new mining development were to occur within these areas, direct loss of wilderness characteristics would be unavoidable because of major surface-disturbing activities associated with mining activities. Under Alternative N, there would be no existing or recommended withdrawals within non-WSA lands with wilderness characteristics. (See withdrawal discussion under the Impacts from Lands and Realty section of this alternative.)

Salable Minerals

Salable minerals would be under the same restrictions as oil and gas resources. The same non-WSA lands with wilderness characteristics that would be open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU) would be available for salable mineral disposal. Similarly, those non-WSA lands that would be closed to leasing or open to leasing subject to major constraints (NSO) would be unavailable for salable mineral disposal (Table 4-28). The non-WSA

lands with wilderness characteristics that would have the greatest potential for sand and gravel occurrence overlie portions of the Little Rockies, Mount Hillers, Ragged Mountain, Bull Mountain, Mount Ellen—Blue Hills, Wild Horse Mesa, Fremont Gorge, and Rocky Ford areas. The non-WSA lands with wilderness characteristics that would have the greatest potential for stone occurrence overlie all the Fremont Gorge area. The non-WSA lands with wilderness characteristics that would have the greatest potential for humate occurrence overlie portions of the Wild Horse Mesa, Muddy Creek/Crack Canyon, and Limestone Cliffs areas.

All or portions of the 29 non-WSA lands with wilderness characteristics areas would remain open to salable mineral disposal. Of the 682,600 acres of non-WSA lands with wilderness characteristics, 667,600 acres would be open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU). This acreage comprises about 98% of non-WSA areas. Where surface disturbance would occur, naturalness and opportunities for primitive recreation and solitude would be foregone. If the gravel pits or building-rock quarries had associated support facilities, including roads and power lines, then soil and vegetation disturbance and the presence of permanent structures would degrade the natural characteristics of non-WSA lands with wilderness characteristics. The noise of the operations of sand and gravel pits or rock quarries, as well as the presence of work crews, vehicles, and equipment, would degrade opportunities for solitude and would conflict with primitive recreational opportunities in proximity to industrial development. As recreational visitors moved away from the sources of development, the sights and sounds of development would diminish. It can be expected that sights and sounds from development would reduce opportunities for solitude and primitive and unconfined recreation for as much as one-half mile beyond the direct area of loss of natural character, depending on topography.

Two percent (15,000 acres) of the non-WSA lands with wilderness characteristics spread between five areas would be open to leasing subject to major constraints (NSO) or would be closed to salable mineral disposal. It is assumed that the various waivers, exceptions, and modifications under the NSO stipulation would not be granted because they would not be in concert with other resource goals and objectives in these areas. Thus, the wilderness characteristics of the areas would be maintained.

Impacts from Special Designations

Wild and Scenic Rivers

Under Alternative N, 4 of the 29 non-WSA land areas intersect with eligible WSR segments, totaling 33.35 miles in those 4 areas. There are 19.31 miles of Dirty Devil River, 0.12 miles of No Man's Canyon, 2.83 miles of Robbers Roost Canyon, 0.13 miles of Sam's Mesa Box Canyon, 1.39 miles of Twin Corral Box Canyon, 5 miles of Fremont River (Fremont Gorge), 3.26 miles of Fremont River (Capital Reef National Park to Caineville Ditch Diversion), and 1.4 miles of Maidenwater Creek that would be managed to preserve their WSR eligibility. Protection of river values would prevent uses and surface disturbances that would detract from the natural character of the Dirty Devil/French Spring, Fremont Gorge, Red Desert, and Little Rockies non-WSA lands with wilderness characteristics within the half-mile river corridor (one-quarter mile of the high water mark on each bank of the river segment).

Areas of Critical Environmental Concern

Under Alternative N, ACEC designation and management would continue for the four existing ACECs, to protect a variety of relevant and important values. Three of the four ACECs would overlay non-WSA lands with wilderness characteristics. Those ACECs are North Caineville Mesa, South Caineville Mesa, and Beaver Wash. The management prescriptions for these ACECs would protect naturalness and opportunities for solitude and primitive recreation in all the non-WSA lands within the ACECs.

A portion (2,200 acres) of the Muddy Creek/Crack Canyon non-WSA lands with wilderness characteristics lies within the existing 2,200 acre North Caineville Mesa ACEC. As a result of the management prescriptions for the ACEC, these non-WSA lands with wilderness characteristics would be closed to OHV use, open to leasing subject to major constraints (NSO), unavailable for livestock grazing, identified as unsuitable for surface coal mining, and recommended for withdrawal from mineral entry; also, inholdings would be acquired from willing sellers. These prescriptions would prevent surface disturbances, limit motorized uses, and protect the natural character of the non-WSA lands with wilderness characteristics and opportunities for solitude and primitive recreation.

A small portion (4 acres) of the Mount Ellen—Blue Hills non-WSA lands with wilderness characteristics area lies within the existing 4,100 acre South Caineville Mesa ACEC. These non-WSA lands with wilderness characteristics would be closed to OHV use, open to leasing subject to major constraints (NSO), unavailable for livestock grazing, and identified as unsuitable for surface coal mining. These ACEC management prescriptions would prevent surface disturbances, limit motorized uses, and protect the natural character and opportunities for solitude and primitive recreation of the non-WSA lands with wilderness characteristics.

A portion (68 acres) of the Dirty Devil/French Spring non-WSA lands with wilderness characteristics lies within the existing 4,800 acre Beaver Wash ACEC. As a result of the management prescriptions for the ACEC, these non-WSA lands with wilderness characteristics would be closed to OHV use, closed to leasing, and recommended for withdrawal from mineral entry; also, land tenure adjustment, including acquisition of all state sections within the ACEC, would be pursued. These prescriptions would prevent surface disturbances, limit motorized uses, and protect the natural character and opportunities for solitude and primitive recreation of the non-WSA lands with wilderness characteristics.

Alternative A

Impacts from Soil Resources and Water Resources

Impacts would be similar to those described under Alternative N, except that no surface disturbance or occupancy would be permitted within 330 feet of natural springs, to protect water quality and riparian vegetation. The effects on the naturalness and opportunities for solitude and primitive recreation of non-WSA lands with wilderness characteristics would therefore occur on fewer acres, compared to Alternative N.

Impacts from Vegetation

Impacts would be similar to those described under Alternative N, except that no surface disturbance or occupancy would be permitted within approximately 330 feet of natural springs (based on geo-hydrological, riparian, and other factors) to protect riparian vegetation. The effects on the naturalness and opportunities for solitude and primitive recreation of non-WSA lands with wilderness characteristics would therefore occur on fewer acres, compared to Alternative N.

When disturbance could not be avoided or mitigated onsite, compensatory offsite mitigation would maintain the total acreage of riparian vegetation in the RFO. However, protection of riparian zones would not necessarily occur in non-WSA lands, nor would it necessarily result in benefits to the naturalness or opportunities for solitude or primitive recreation of non-WSA lands. Compensation might occur either inside or outside the non-WSA lands.

Under Alternative A, maximum treatment acreage limits would be set (averaging 73,600 annually for all treatments). Because no target treatment acreage limits (maximum or minimum) would be set under Alternative N, it is likely (based on historic trends) that in some years, fewer acres would be treated under

Alternative N, whereas in other years (when there are numerous wildland fires), more acres could be treated under that alternative.

Precise locations for vegetation treatments are not known at this time, but if these treatments were to occur in non-WSA lands, the types of impacts experienced would be similar to those described under Alternative N.

Impacts from Cultural Resources

Impacts would be similar to those described under Alternative N for the Bull Creek Archaeological District. In addition, allocation of cultural sites to scientific, public, conservation, traditional, and experimental uses under Alternative A would increase knowledge of cultural resources and would enhance opportunities for primitive forms of recreation. Knowing more about the cultural resources of an area, interpreting the resource in an appropriate fashion, and viewing cultural resource sites in the non-WSA areas would add to the enjoyment of these areas for primitive recreational purposes. Protection of cultural resources would add to the character of the setting that supports these recreational opportunities.

Providing Native American tribes access to public lands for traditional purposes might impact wilderness characteristics of non-WSA lands. If access is provided by motorized vehicle, the noise and presence of vehicles would reduce opportunities for solitude and would conflict with primitive forms of recreation.

Impacts from Paleontological Resources

Impacts would be the same as those described under Alternative N.

Impacts from Visual Resources

The types of impacts experienced as a result of VRM would be similar to those described under Alternative N. Under Alternative A, no non-WSA lands would be designated as VRM Class I or II to retain landscape character. All lands would be managed for uses and activities that might result in changes to the landscape. (However, this management does not mean that every acre would be developed or would change.) The natural character of the non-WSA lands could be lost. If the naturalness of these areas was lost, the opportunities for solitude and primitive recreation would be lost because the setting needed to support these opportunities would be altered.

Impacts from Special Status Species

The types of impacts experienced as a result of SSS management would be similar to those described under Alternative N. In addition, under Alternative A, strategies would be employed that would avoid or reduce fragmentation of SSS habitat. These strategies could include collocating communication and other facilities, employing directional drilling for oil and gas, and closing and reclaiming roads. If a proposed project were located on non-WSA lands with wilderness characteristics, these strategies would help to consolidate surface-disturbing activities and would protect additional acres from loss of naturalness. However, any surface-disturbing activities would still impair the naturalness of the areas and could affect solitude and primitive recreation opportunities in the areas in which the strategies were employed.

Impacts from Fish and Wildlife

Impacts would be the same as those described under Alternative N.

Impacts from Wild Horses and Burros

Impacts would be the same as those described under Alternative N.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under Alternative A, there would be no specific actions prescribed to directly protect the naturalness and opportunities for solitude or primitive recreation of the non-WSA areas, resulting in no impacts to non-WSA lands.

Impacts from Forestry and Woodland Products

Under Alternative A, commercial and non-commercial timber harvest would be allowed where feasible, sustainable, and compatible with restoring, maintaining, or improving forest health. All non-WSA lands with wilderness characteristics that have timber would be open to timber-harvest permitting. Activities associated with timber harvest would diminish the wilderness characteristics values of naturalness, solitude, and primitive recreation opportunities within the areas being harvested. These activities include the use of heavy equipment and chain saws, new road construction, cutting trees and leaving stumps and debris, and human activity.

Permits for commercial and non-commercial woodland products (primarily fire-wood cutting) would continue to be sold to the public in all 29 non-WSA areas (where the resources exist), which would remain open for such activities. If permits were sold within non-WSA lands, wilderness characteristics would be compromised by surface-disturbing activities such as driving cross-country to the trees and cutting the trunks of trees and leaving stumps and debris. The use of chain saws and the surface disturbances associated with human activity activities would affect solitude and primitive recreation opportunities.

Commercial live plant and seed collection impacts would be the same as those described under Alternative N.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

ERMAs

Public lands in the Fiddler Butte, Labyrinth Canyon, Mount Ellen—Blue Hills, and Little Rockies non-WSA areas would be managed in a primitive, naturally appearing setting for a high probability of experiencing solitude and closeness to nature. This management would be accomplished by preserving resources, managing access primarily as non-motorized, and providing minimum improvements and no onsite interpretive facilities. This management would protect the wilderness characteristics values of naturalness and would enhance opportunities for solitude and primitive recreation in portions of these non-WSA lands with wilderness characteristics.

Designating campsites and areas appropriate for large group events and camping at Sandy Creek Overlook would impact the naturalness and opportunities for solitude and primitive recreation in the northernmost portion of the Mount Pennell non-WSA lands with wilderness characteristics area. This impact would affect less than 1% of this 65,600 acre non-WSA area.

SRMAs

Three of the proposed SRMAs would overlap portions of eight non-WSA lands with wilderness characteristics. There would be 317,010 acres of non-WSA lands within the three SRMAs (or 46% of non-WSA lands).

The 290,000 acre Dirty Devil/Robbers Roost SRMA would encompass 110,860 acres within the Dirty Devil/French Spring non-WSA area; 20,640 acres of the Horseshoe Canyon South non-WSA area; and 12,283 acres of the Labyrinth Canyon non-WSA area. Because this SRMA would be managed for its primitive values and no competitive events would be permitted, the wilderness characteristics of this area would be maintained and opportunities for solitude and a primitive recreation experience would be protected.

The 199,700 acre Factory Butte SRMA and the 12,300 acre Sahara Sands SRMA would encompass 173,215 acres of the Mount Ellen—Blue Hills non-WSA area; 61,680 acres of the Muddy Creek/Crack Canyon non-WSA area; 40,550 acres of the Red Desert non-WSA area; 49,640 acres of the Wild Horse Mesa non-WSA area; and 25 acres of the Fiddler Butte non-WSA area. Both SRMAs would be managed as OHV open (cross-country) areas with developed facilities. This management would be in conflict with wilderness characteristic values because naturalness would be compromised through surface-disturbing activities, and opportunities for solitude and primitive recreation would be foregone because of OHV cross-country travel and associated noise. Facility development would also impair wilderness characteristics through surface-disturbing activities and reduction of natural values.

Impacts from Travel Management

Alternative A would designate 18 areas managed as open OHV play areas. Of these 18 open areas, 9 would comprise 221,800 acres (32%) within 14 of the 29 non-WSA lands with wilderness characteristics areas that would be open to cross-country travel:

- A portion (200 acres) of the Little Rockies non-WSA lands with wilderness characteristics lies within the 19,500 acre proposed Ticaboo Play Area.
- A portion (200 acres) of the Fiddler Butte non-WSA lands with wilderness characteristics lies within the 12,700 acre proposed Sahara Sands Play Area.
- Portions of the Dirty Devil/French Spring (13,100 acres), Flat Tops (200 acres), and Sweetwater Reef (1,900 acres) non-WSA lands with wilderness characteristics lie within the 19,700 acre proposed Roost Play Area.
- Portions of the Mount Ellen—Blue Hills (21,400 acres), Muddy Creek/Crack Canyon (61,800 acres), Red Desert (40,700 acres), and Wild Horse Mesa (49,700 acres) non-WSA lands with wilderness characteristics lie within the 200,100 acre proposed Factory Butte Play Area.
- A portion (10,900 acres) of the Fremont Gorge non-WSA lands with wilderness characteristics lies within the 9,800 acre proposed Miners Mountain and 5,000 acre proposed Beas Lewis Flat Play Areas.
- A portion (4,400 acres) of the Pole Canyon/Hunter Spring non-WSA lands with wilderness characteristics lies within the 4,600 acre proposed Hunter Spring Play Area.
- Portions of the Kingston Ridge (2,900 acres) and Phonolite Hill (7,700 acres) non-WSA lands with wilderness characteristics lie within the 102,700 acre proposed Antelope Range/Kingston Canyon Play Area.
- A portion (6,700 acres) of the Rocky Ford non-WSA lands with wilderness characteristics lies within the 12,900 acre proposed Rocky Ford Play Area.

Cross-country motorized travel in these non-WSA lands would result in surface disturbance to soils and vegetation and would alter the landscape and diminish the natural character of these non-WSA lands. Further, the presence and noise of motorized vehicles would degrade visitors' opportunity for solitude and would conflict with opportunities for primitive and unconfined recreation activities.

Under Alternative A, there are no specific management prescriptions for managing OHV use in non-WSA lands with wilderness characteristics. However, management actions for other resources and resource uses

would place limitations on OHV use in these areas. OHV use would be limited to designated routes in 460,600 acres (68%) within 25 of the 29 non-WSA lands with wilderness characteristics, as identified under Alternative D. In these areas, 360.7 miles of routes would be designated as shown in Table 4-31.

Table 4-31. OHV Route Designations in Non-WSA Lands with Wilderness Characteristics, Alternative A

Non-WSA Area Name	Miles of Routes
Bull Mountain	1.8 miles
Bullfrog Creek	20.7 miles
Dirty Devil/French Spring	146.2 miles
Dogwater Creek	0.1 miles
Fiddler Butte	3.3 miles
Flat Tops	26.2 miles
Fremont Gorge	11.5 miles
Horseshoe Canyon South	10.9 miles
Jones Bench	0.9 miles
Kingston Ridge	6.6 miles
Labyrinth Canyon	2.2 miles
Limestone Cliffs	14.1 miles
Little Rockies	8.3 miles
Long Canyon	2 miles
Mount Ellen—Blue Hills	30.4 miles
Mount Hillers	1.9 miles
Mount Pennell	30.8 miles
Mussentuchit Badlands	0 miles
Notom Bench	3.6 miles
Phonolite Hill	10.1 miles
Pole Canyon/Hunter Spring	13 miles
Ragged Mountain	11.1 miles
Rock Canyon	1.2 miles
Sweetwater Reef	3.8 miles
Wildcat Knolls	0 miles

Limiting OHV use would confine to designated routes the soil and vegetation disturbance caused by motor vehicles, thus resulting in no additional change to the natural character of the non-WSA lands. However, the presence and noise of vehicles using these routes would reduce visitors' opportunity to find solitude in the non-WSA areas, especially in proximity to the routes. Motorized uses would conflict with primitive and unconfined recreation opportunities sought in the non-WSA areas.

Under Alternative A, motor vehicles would be allowed to pull off of a designated route as much as 100 feet to either side of the centerline (for parking/staging). Motor vehicles would be allowed to use existing spur routes for ingress and egress to established campsites within 300 feet of the centerline of designated routes but would be prohibited from traveling between multiple campsites, establishing motorized play areas or race tracks, or traveling across wet meadows or riparian areas. These actions would allow for parking and camping while confining the areas in which soil and vegetation disturbance would occur, thus resulting in limited change to the natural character of the non-WSA lands.

OHV open areas near communities would be considered and encouraged for leasing under authority of the R&PP, to allow local management of OHV play areas. Generally these areas would include previously disturbed areas and would be considered on a case-by-case basis. If an R&PP open area was leased and overlapped non-WSA areas, the action would continue to degrade the natural character of the non-WSA lands with wilderness characteristics, by allowing the surface-disturbing activity from motorized vehicles to continue. The action would also conflict with opportunities for solitude and primitive recreation experiences away from the sights and sounds of vehicle travel.

Impacts from Lands and Realty

Land Tenure Adjustments

Alternative A identifies as available for FLPMA Section 203 sales three parcels (600 acres) of land in the Notom Bench, Red Desert, and Dogwater Creek non-WSA lands with wilderness characteristics. One parcel (80 acres) is in the Notom Bench non-WSA area; one parcel (160 acres) is in the Red Desert non-WSA area; and one parcel (360 acres) is in the Dogwater Creek non-WSA area. All three parcels are interspersed with private lands adjoining the Capitol Reef National Park boundary. Disposal of these lands would take them out of public ownership and would allow for development and surface-disturbing activities outside of BLM's control. The wilderness characteristics could be foregone because the lands would no longer be under BLM control.

Withdrawals

Impacts would be the same as those described under Alternative N.

Rights-of-Way and Other Land Use Authorizations

Four proposed ROW corridors would overlay small slivers of the exterior boundaries of nine non-WSA lands with wilderness characteristics areas. Each corridor would be 800 feet wide (400 feet to each side of the centerline). The proposed State Highway 24 ROW corridor would overlay the Wild Horse Mesa, Red Desert, Fremont Gorge, and Notom Bench non-WSA lands with wilderness characteristics. The proposed State Highway 95 and State Highway 276 ROW corridors would overlay slivers of Little Rockies and Fiddler Butte non-WSA lands with wilderness characteristics. The proposed State Highway 62 ROW corridor would overlay slivers of Rocky Ford, Phonolite Hill, and Kingston Ridge non-WSA lands with wilderness characteristics. Placement of future utility ROWs within these corridors would diminish the wilderness characteristics in the areas by creating surface-disturbing activities (and possibly by placing surface facilities) that would no longer maintain the wilderness characteristics values in those linear corridors.

Non-WSA lands with wilderness characteristics that would remain available for granting of ROWs include all of 28 areas and portions of 1 area, totaling 682,594 acres. Any surface-disturbing activity or placement of permanent facilities would detract from the natural character of the area and would disrupt the setting needed to support primitive forms of recreation.

Under Alternative A, 6 acres in one non-WSA lands with wilderness characteristics area would be protected in part from surface-disturbing actives because those acres would be within ROW avoidance

areas (Table 4-27). Portions of the Fremont Gorge non-WSA lands with wilderness characteristics would be within the ROW avoidance areas. These areas are to be avoided but might be available for location of ROWs with special stipulations if the proposal met the goals and objectives of other resources and uses in the LUP. It is expected and assumed that the avoidance areas would protect the natural character of the non-WSA lands in these areas.

Impacts from issuance of other land use authorizations would be the same as those described under Alternative N.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Lands open to oil and gas leasing within non-WSA lands with wilderness characteristics are listed in Table 4-28. Exploration and development activities could impact wilderness characteristics through the direct disturbance of the natural terrain and consequent impacts on solitude and opportunities for primitive recreation. Virtually all the lands with wilderness characteristics would be open to leasing under Alternative A. The types of impacts experienced as a result of oil and gas activities would be the same as those described under Alternative N.

All 29 non-WSA lands with wilderness characteristics areas would remain open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU). There are 682,600 acres of non-WSA lands with wilderness characteristics within the RFD areas. All these acres would be open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU).

As described under Alternative N, the RFD scenario for oil and gas development in RFD combined Areas 1 and 2 predicts that during the next 15 years, approximately 45 exploratory wells (3 wells per year) would disturb a total of 540 acres (12 acres per well), and an additional 240 acres would be minimally disturbed by geophysical operations. In RFD Areas 1 and 2, 24 non-WSA wilderness characteristics areas would remain open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU). There are 645,800 acres of non-WSA lands with wilderness characteristics within this combined RFD area. All acres would be open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU). The non-WSA lands with wilderness characteristics that have the greatest percentage leased at this time would be in the Flat Tops and Dirty Devil/French Spring areas. The non-WSA lands open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU) would make up 25% of the RFD area. This percentage is generally the same as under Alternative N. Thus, the same analysis as under Alternative N, portraying 1 well per year in the non-WSA areas (12 wells total during the 15-year RFD scenario) would be applicable for Alternative A.

The RFD scenario for oil and gas activity in RFD Area 3 predicts that during the next 15 years, approximately 49 exploratory wells (about 3 wells per year) would disturb a total of 1,100 acres (22 acres per well), and an additional 360 acres would be minimally disturbed by geophysical operations. In this RFD area, five non-WSA wilderness characteristics areas would remain open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU). There are 36,800 acres of non-WSA lands with wilderness characteristics within this RFD area. All acres would be open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU). Because well projections under Alternative A are the same as those under Alternative N, and because the same percentage of lands in the RFD area generally encompass non-WSA lands with wilderness characteristics, the same analysis (portraying two wells during the 15 year RFD scenario) would be applied.

Impacts for geophysical activities would be the same as those described under Alternative N.

Leasable Minerals—Geothermal

Impacts would be the same as those described under Alternative N.

Leasable Minerals—Coal

Impacts would be the same as those described under Alternative N.

Non-Energy Solid Leasable Minerals

Impacts would be the same as those described under Alternative N.

Locatable Minerals

Impacts would be the same as those described under Alternative N.

Salable Minerals

Impacts would be similar to those described under Alternative N, except that all 682,600 acres within the 29 non-WSA lands with wilderness characteristics areas would remain open to disposal of salable minerals under standard conditions or minor constraints.

Impacts from Special Designations

Wild and Scenic Rivers

Under Alternative A, no ACECs would be designated. Therefore, management prescriptions to protect relevant and important values would not be applied and would not afford protection of wilderness values in non-WSA lands with wilderness characteristics. Of all the alternatives, Alternative A would provide the lowest level of protection to non-WSA lands because no eligible river segments would be recommended for suitability.

Areas of Critical Environmental Concern

Under Alternative A, no WSR segments would be found suitable for inclusion in the NWSRS. Therefore, management prescriptions to protect the suitable river segments would not be applied and would not afford protection of wilderness values in non-WSA lands with wilderness characteristics. This alternative would provide the lowest level of protection to non-WSA lands because no ACECs are designated.

Proposed RMP

Impacts from Soil Resources and Water Resources

Impacts would be similar to those described under Alternative A for the 12 non-WSA areas (78,600 acres) managed for wilderness characteristics in the Proposed RMP. The proposed buffer zones for the protection of natural springs and maintenance or restoration of watershed health and soil productivity would improve the natural condition of these areas. However, some methods of treatment may not be consistent with the management goals and objectives for these non-WSA managed areas (VRM Class II, naturalness, solitude). Therefore, if potential impacts could not be mitigated, the long-term benefits of these types of projects may not be realized.

For the remainder of the non-WSA areas not being managed for wilderness characteristics, the impacts would be the same as those described under Alternative A.

Impacts from Vegetation

Impacts would be similar to those described under Alternative A for the protection of riparian areas except that the buffer zone would be larger. Maintenance and restoration of riparian zones, and retention of these zones in public ownership, would maintain and enhance opportunities for primitive recreation and other activities dependent upon water courses and riparian ecosystems. The non-WSA lands managed for wilderness characteristics in the Proposed RMP (78,600 acres) would be considered for Healthy Lands Initiative projects only where they improve the overall goals and objectives for managing the wilderness characteristics of these areas. As described under Alternative N, some methods of vegetation treatments, such as mechanical vegetation manipulation, would not be consistent with these management goals. Therefore, if potential impacts could not be mitigated by utilizing less surface disturbing treatment methods, the long-term benefits of these types of projects may not be realized.

For the remainder of the non-WSA areas not being managed for wilderness characteristics, the impacts would be similar to Alternative A except that the buffer zone for protection of riparian areas would be larger. The effects on the naturalness and opportunities for solitude and primitive recreation on non-WSA lands with wilderness characteristics would therefore occur on less acres as compared to Alternatives N and A.

Impacts from Cultural Resources

For the 12 non-WSA areas being managed for wilderness characteristics, the allocation of cultural sites to scientific, public, conservation, traditional and experimental uses under the Proposed RMP would increase knowledge of cultural resources and would enhance opportunities for primitive forms of recreation. Knowing more about the cultural resources of an area, interpreting the resource in an appropriate fashion, and viewing cultural resource sites in the non-WSA areas all would add to the enjoyment of these areas for primitive recreational purposes. Protection of cultural resources would add to the character of the setting and complement the management of these non-WSA lands. Depending on site location and size, some surface disturbing activities associated with the allocated uses may not be consistent with the goals and objectives of the wilderness characteristic areas. Therefore, if potential impacts could not be mitigated, the long-term benefits of inventory efforts may not be realized.

Providing Native American tribes access to managed non-WSA areas for traditional purposes might impact wilderness characteristics of these non-WSA lands. If access is provided by motorized vehicle, the noise and presence of vehicles would reduce opportunities for solitude and would conflict with primitive forms of recreation.

For the remainder of the non-WSA lands not managed for wilderness characteristics, impacts would be similar to those described above except that proposals would not be required to maintain wilderness characteristics. Management of the Bull Creek Archaeological District with major constraints (NSO) and conducting resource inventories would provide additional protection to a portion of the Mount Ellen/Blues Hills and increase knowledge of cultural resources.

Impacts from Paleontological Resources

For the 12 non-WSA areas being managed for wilderness characteristics, increased knowledge of paleontological resources through inventory, interpretation and education, and protecting significant fossils from collection or damage would add to the enjoyment of these areas for primitive recreational purposes. However, some surface disturbing activities associated with the excavation of fossil localities with significant scientific value may not be consistent with the goals and objectives of the wilderness characteristic areas. The potential for conflicts between wilderness characteristic values and excavation impacts would depend on the location and size of the paleontological resource. If potential impacts could not be mitigated, the paleontological resource would continue to be at risk from theft, erosion and/or

vandalism and require additional on-the-ground monitoring. The lack of vehicle access into the managed non-WSA areas would reduce the potential for theft of these resources. Collection of common invertebrate fossils and botanical paleontological resources for personal use, while providing a primitive recreational experience, would remove an element of the natural landscape.

For the remainder of the non-WSA areas not being proposed for management of wilderness characteristics, impacts would be similar to those described under Alternative N except that more inventories and assessments are proposed within the Proposed RMP. This would result in increased beneficial impacts through the increased knowledge, interpretation and protection of paleontological resources within these areas.

Impacts from Visual Resources

The 12 non-WSA areas being managed for wilderness characteristics would be designated as VRM Class II. Management objectives for VRM Class II would protect, preserve, and maintain the natural character of these areas (78,600 acres).

For the remainder of the non-WSA lands, not managed for wilderness characteristics, the types of impacts experienced as a result of VRM would be similar to those described under Alternative N. Under the Proposed RMP, 105,865 acres would be designated as VRM Class II in all or parts of 17 non-WSA lands with wilderness characteristics, protecting the natural character of those lands. In addition, 498,135 acres would be designated as VRM Class III or IV, possibly adversely impacting the wilderness characteristics by allowing moderate or major modification to the characteristic landscape.

Impacts from Special Status Species

For the 12 non-WSA areas being managed for wilderness characteristics (78,600 acres), impacts would be similar to those described under Alternative A. The decision to retain habitat for Federally-listed and candidate species in Federal ownership would be beneficial to management of non-WSA areas. The management prescriptions for the 12 non-WSA areas in the Proposed RMP call for the retention of public lands in federal ownership. The Special Status Species decision also provides for the exception to consider exchanges with the State of Utah of Federally-listed and candidate species habitats. This exception would not be allowed if a proposed exchange overlapped with any of these non-WSA lands.

For the remainder of the non-WSA lands with wilderness characteristics, impacts would be the same as described under Alternative A.

Impacts from Fish and Wildlife

Impacts to the 12 non-WSA areas managed for wilderness characteristics (78,600 acres) would be the same as those described under Alternative N, with the exception that habitat manipulations would be allowed to benefit bison and mule deer in the Henry Mountains bison and mule deer range. The bison and mule deer range overlays portions of Mount Ellen—Blue Hills, Ragged Mountain, and Mount Pennell non-WSA lands with wilderness characteristics areas. These habitat manipulations, depending on the method used, could impact the naturalness of the non-WSA areas and could affect the solitude and primitive recreation opportunities in these areas, especially during the time of employment. Mechanical treatments would have the most long-term impacts because of the use of motorized equipment and surface-disturbing effects of the treatment. In addition, construction of new range projects that benefit wildlife, such as water developments and fencing of riparian areas, would impair the natural character of small areas (generally less than 5 acres) in the non-WSA lands with wilderness characteristics. These types of treatments would not be consistent with the management goals for these non-WSA areas. Therefore, if potential impacts could not be mitigated by utilizing less surface disturbing methods, the long-term benefits of these types of projects may not be realized.

For the remainder of the non-WSA lands not proposed for management of wilderness characteristics, the impacts would be the same as those described above except that all methods of treatments would be available. Impacts to naturalness, solitude and primitive recreation opportunities could occur in these areas. However, there would also be beneficial impacts from improved habitat conditions in the long-term.

Impacts from Wild Horses and Burros

The Proposed RMP would have similar impacts to wilderness characteristics as would Alternative N. The Canyonlands HMA would overlap portions of the Labyrinth Canyon and Horseshoe Canyon South non-WSA lands identified in the Proposed RMP for management of wilderness characteristics. Herd size might be augmented in the Canyonlands HMA because of higher allocations of AUMs for wild burros under the Proposed RMP, which would continue or improve the opportunities for viewing of wild burros.

Impacts from Non-WSA Lands with Wilderness Characteristics

The Proposed RMP would manage the following 12 non-WSA lands with wilderness characteristics areas (78,600 acres) to preserve, protect, and maintain their wilderness characteristics:

- Dirty Devil/French Spring (6,100 acres)
- Dogwater Creek (3,100 acres)
- Horseshoe Canyon South (12,200 acres)
- Jones Bench (2,600 acres)
- Labyrinth Canyon (2,800 acres)
- Little Rockies (9,500 acres)
- Mount Ellen-Blue Hill (3,900 acres)
- Mount Pennell (4,700 acres)
- Notom Bench (8,200 acres)
- Ragged Mountain (7,900 acres)
- Red Desert (8,900 acres)
- Wild Horse Mesa (8,700 acres).

These areas would be managed by the following prescriptions:

- Designate VRM Class II
- Limit motorized use to designated routes
- Designate oil and gas leasing as open to leasing subject to major constraints (NSO)
- Establish ROW avoidance areas
- Open areas to locatable minerals entry
- Retain public lands in federal ownership
- Maintain and use existing facilities and valid existing rights
- Prohibit woodland harvest
- Make areas available for Healthy Lands Initiative.

These prescriptions would prevent surface disturbances that would degrade the natural character of the non-WSA areas, prevent surface disturbances and uses that would be incompatible with primitive recreation activities, and protect the setting needed to support the experience of solitude. As discussed in the soil and vegetation sections of this analysis, some methods for Healthy Lands Initiative treatments would not be consistent with these management goals. Therefore, if potential impacts could not be mitigated by utilizing less surface disturbing treatment methods, the long-term benefits of these types of

projects may not be realized. The remainder of the non-WSA lands with wilderness characteristics areas (604,000 acres) would be managed pursuant to other resource decisions outlined in the Proposed RMP. Direct and indirect impacts would be included within the analysis for those resources.

Impacts from Forestry and Woodland Products

Under the Proposed RMP, the 12 non-WSA areas managed for wilderness characteristics would not be available for woodland harvest. Therefore, there would be no impacts to wilderness characteristics from woodland products. Timber harvest in association with improving forest health would only be allowed if it was consistent with management goals of these non-WSA areas. Mechanical treatments would have the most long-term impacts because of the use of motorized equipment and surface-disturbing effects of the treatment. Therefore, if potential impacts could not be mitigated by utilizing less surface disturbing treatment methods, the long-term benefits of these types of projects may not be realized.

For the remaining non-WSA areas not proposed for management of wilderness characteristics, impacts would be the same as those described under Alternative A.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

ERMAs

Four of the 12 non-WSA areas (29,700 acres) identified for management of wilderness characteristics in the Proposed RMP would be located in ERMAs: Little Rockies, Red Desert, Wild Horse Mesa and Jones Bench. The Little Rockies area would be managed in a primitive, naturally appearing setting for a high probability of experiencing solitude and closeness to nature. This would be consistent with the protection of wilderness characteristic values for the non-WSA lands within the Little Rockies area. ERMAs would receive only custodial management with facilities, based on needs for resource protection and user demand. It is unlikely that such facilities would be necessary within the non-WSA management areas due to lack of motorized access. However, site-specific developments would be analyzed on a case-by-case basis and would be required to be consistent with management prescriptions of the non-WSA areas.

For the non-WSA lands not identified for management of wilderness characteristics which are located within the ERMAs (322,200 acres), impacts would be the same as those described under Alternative A.

SRMAs

Two of the proposed SRMAs would overlap eight of the 12 non-WSA areas proposed for management of wilderness characteristics in the Proposed RMP. There would be 48,900 acres of non-WSA lands within the two SRMAs within the Proposed RMP.

The 290,500 acre Dirty Devil/Robber's Roost SRMA would encompass all of the Labyrinth, Horseshoe Canyon and Dirty Devil-French Spring non-WSA areas managed for wilderness characteristics. Management of this SRMA for its primitive values would complement the proposed management for wilderness characteristics, therefore providing additional beneficial effects.

The 532,600 acre Henry Mountain SRMA would encompass all of the Mt. Ellen-Blue Hills, Mt. Pennell, Ragged Mountain, Dogwater Creek and Notom Bench non-WSA areas managed for wilderness characteristics. The Henry Mountains SRMA would have mixed management strategies for recreational opportunities. Some areas would be managed for their primitive opportunities, and some would be managed for group camping areas, developed facilities, and semi-primitive motorized recreation. It is unlikely that such facilities would be necessary within the non-WSA management areas due to lack of

motorized access. However, site-specific developments would be analyzed on a case-by-case basis and would be required to be consistent with management prescriptions for the non-WSA areas.

Some of the non-WSA areas not managed for wilderness characteristics under the Proposed RMP would be located within SRMAs which could provide some indirect protection of wilderness characteristics depending on the management objectives of the SRMA.

The Dirty Devil/Robbers Roost SRMA would encompass 122,700 acres of the remaining Dirty Devil/French Spring, Horseshoe Canyon South and Labyrinth Canyon non-WSA areas not specifically managed for wilderness characteristics. Because this SRMA would be managed for its primitive values, the wilderness characteristics of this area would be maintained and opportunities for solitude and a primitive recreation experience would be protected.

The Henry Mountains SRMA would contain 131,200 acres of the remaining non-WSA areas not specifically managed for wilderness characteristics, including all or portions of the Bull Mountain, Dogwater Creek, Mount Ellen-Blue Hills, Mount Hillers, Mount Pennell, Notom Bench, Ragged Mountain and Red Desert areas. The Henry Mountains SRMA would have mixed management strategies for recreation opportunities. Some areas would be managed for their primitive opportunities and some would be managed for group camping areas, developed facilities and semi-primitive motorized recreation. OHV activities would be limited to designated routes, temporarily affecting solitude and opportunities for primitive recreation when vehicles are in the area. Wilderness characteristics values could be compromised by construction of recreational facilities, placement of signs, and construction of trails and staging areas. However, wilderness characteristics would continue to be maintained within large areas of the Henry Mountains SRMA (because of its sheer size and interrelationship with existing WSAs and non-WSA lands managed for their wilderness characteristics).

Approximately 7,800 acres of the remaining non-WSA lands (Fremont Gorge) not specifically managed for wilderness characteristics fall within the Capitol Reef Gateway SRMA. The Capitol Reef Gateway SRMA would have mixed management strategies for recreation opportunities. Some areas would be managed for their primitive opportunities and some would be managed for group camping areas, developed facilities and semi-primitive motorized recreation. Wilderness characteristics values could be compromised by construction of recreational facilities, placement of signs, and construction of trails and staging areas. OHV activities would be limited to designated routes, temporarily affecting solitude and opportunities for primitive recreation when vehicles are in the area. However, wilderness characteristics would continue to be maintained within the immediate area of Fremont Gorge, which would be closed to OHV use. Approximately 20,100 acres of the 61,800 acre Muddy Creek/Crack Canyon non-WSA area not specifically managed for wilderness characteristics would fall within the Factory Butte SRMA. Because this SRMA promotes motorized recreation opportunities and opens a portion of the SRMA land to cross-county OHV use, that portion of the non-WSA area (less than 10% of the total Muddy Creek/Crack Canyon non-WSA area) could have a direct loss of natural condition through unrestricted OHV use. (Approximately 5,700 acres would be within the OHV Play Area Recreation Management Zone [RMZ].) Wilderness characteristics in the rest of the area would be protected by signing and protective fencing. The facilities would improve outstanding opportunities for solitude and primitive recreation, by keeping impacts from OHV use in the OHV Play Area RMZ.

Impacts from Travel Management

Under the Proposed RMP, motorized travel within the 12 non-WSA areas managed for wilderness characteristics (78,600 acres) would be limited to designated routes. In these areas, 25 miles of routes would be designated as shown in Table 4-32.

Table 4-32. OHV Route Designations in Non-WSA Lands with Wilderness Characteristics, Proposed RMP

Non-WSA Area Name	Miles of Routes
Bull Mountain – Not managed for wilderness characteristics	1.8 miles
Bullfrog Creek – Not managed for wilderness characteristics	20.7 miles
Dirty Devil/French Spring – Managed for wilderness characteristics	0.3 miles
Dirty Devil/French Spring – Not managed for wilderness characteristics	117.5 miles
Dogwater Creek – Managed for wilderness characteristics	1.4 miles
Dogwater Creek – Not managed for wilderness characteristics	0.1 miles
Fiddler Butte - Not managed for wilderness characteristics	2.1 miles
Flat Tops- Not managed for wilderness characteristics	26.2 miles
Fremont Gorge- Not managed for wilderness characteristics	11.5 miles
Horseshoe Canyon South– Managed for wilderness characteristics	4.2 miles
Horseshoe Canyon South- Not managed for wilderness characteristics	10.2 miles
Jones Bench– Managed for wilderness characteristics	0.1 miles
Jones Bench- Not managed for wilderness characteristics	1 mile
Kingston Ridge- Not managed for wilderness characteristics	6.6 miles
Labyrinth Canyon– Managed for wilderness characteristics	0 miles
Labyrinth Canyon- Not managed for wilderness characteristics	2.2 miles
Limestone Cliffs- Not managed for wilderness characteristics	14.1 miles
Little Rockies– Managed for wilderness characteristics	0.1 miles
Little Rockies- Not managed for wilderness characteristics	8.3 miles
Long Canyon- Not managed for wilderness characteristics	2 miles
Mount Ellen-Blue Hills– Managed for wilderness characteristics	0.6 miles
Mount Ellen—Blue Hills- Not managed for wilderness characteristics	30.4 miles
Mount Hillers- Not managed for wilderness characteristics	1.9 miles
Mount Pennell– Managed for wilderness characteristics	1.7 miles
Mount Pennell- Not managed for wilderness characteristics	30.8 miles
Muddy Creek/Crack Canyon- Not managed for wilderness characteristics	31.9 miles
Mussentuchit Badlands- Not managed for wilderness characteristics	0 miles
Notom Bench– Managed for wilderness characteristics	5.6 miles
Notom Bench- Not managed for wilderness characteristics	3.6 miles
Phonolite Hill- Not managed for wilderness characteristics	9.7 miles
Pole Canyon/Hunter Spring- Not managed for wilderness characteristics	12.3 miles
Ragged Mountain– Managed for wilderness characteristics	1.9 miles
Ragged Mountain- Not managed for wilderness characteristics	11.1 miles
Red Desert– Managed for wilderness characteristics	1.1 miles
Red Desert- Not managed for wilderness characteristics	29.3 miles

Non-WSA Area Name	Miles of Routes
Rock Canyon- Not managed for wilderness characteristics	1.2 miles
Rocky Ford- Not managed for wilderness characteristics	3.9 miles
Sweetwater Reef- Not managed for wilderness characteristics	3.8 miles
Wild Horse Mesa– Managed for wilderness characteristics	8.1 miles
Wild Horse Mesa- Not managed for wilderness characteristics	35 miles
Wildcat Knolls- Not managed for wilderness characteristics	0 miles
Total miles of routes in areas managed for wilderness characteristics (Proposed RMP)	**25.1**
Total miles of routes in areas not managed for wilderness characteristics from Alternative D	**429.2**

Limiting OHV use would confine to designated routes the soil and vegetation disturbance caused by motor vehicles, resulting in no additional change to the natural character of the non-WSA lands. The presence and noise of vehicles using these routes, however, would reduce visitors' opportunity to find solitude in the non-WSA areas, especially in proximity to the routes. These impacts to solitude would be short-term, while vehicles were in the area and reduce as visitors move away from the routes. Motorized uses could conflict with primitive and unconfined recreation opportunities sought in the non-WSA areas. However, the miles of routes within the non-WSA areas managed for wilderness characteristics are low and would result in minimal impacts.

OHV open areas near communities would be considered and encouraged for leasing under authority of the R&PP, to allow local management of OHV play areas. Generally, these areas would include previously disturbed areas and would be considered on a case-by-case basis. The non-WSA lands managed for wilderness characteristics do not include areas where this type of cross-country use has been occurring and such use would not be consistent with management goals and objectives of the non-WSA areas.

In the remainder of the non-WSA lands not managed for wilderness characteristics, there would be 5,700 acres designated as open (Factory Butte Play Area), 564,050 acres limited to designated routes and 34,250 acres closed to motorized use. The Proposed RMP would designate four areas to be managed as open OHV play areas; including 5,700 acres within the Muddy Creek/Crack Canyon non-WSA lands with wilderness characteristics area. Cross-country motorized travel in these non-WSA lands would continue to result in surface disturbance to soils and vegetation, altering the landscape and diminishing the natural character of these non-WSA lands. Further, the presence and noise of motorized vehicles would degrade visitors' opportunity for solitude and would conflict with opportunities for primitive and unconfined recreation activities. The Factory Butte Play Area would be within the Factory Butte SRMA (24,400 acres). Management prescriptions for the SRMA (Appendix 18), establish Recreation Management Zones to accommodate various user groups. Educating visitors of these motorized and non-motorized opportunities would reduce conflicts and continue to provide non-motorized opportunities within the Landmarks RMZ.

Under the Proposed RMP, OHV use would be limited to designated routes in 564,050 acres (93%) of the remaining non-WSA lands with wilderness characteristics. In these areas, 25.1 miles of routes would be designated as shown in Table 4-32.

Limiting OHV use would confine to designated routes the soil and vegetation disturbance caused by motor vehicles, resulting in no additional change to the natural character of the non-WSA lands. The

presence and noise of vehicles using these routes, however, would reduce visitors' opportunity to find solitude in these areas, especially in proximity to the routes. These impacts to solitude would be short-term, while vehicles were in the area and reduce as visitors move away from the routes. Motorized uses would conflict with primitive and unconfined recreation opportunities sought in these non-WSA areas.

Under the Proposed RMP, motor vehicles would be allowed to pull off of a designated route as far as 50 feet to either side of the centerline (for parking/staging). Motor vehicles would be allowed to use existing spur routes for ingress and egress to established campsites within 150 feet of the centerline of designated routes but would be prohibited from traveling between multiple campsites, establishing motorized play areas and race tracks, or traveling across wet meadows or riparian areas. These actions would allow for parking and camping while confining the area in which soil and vegetation disturbance would occur, resulting in limited change to the natural character of the non-WSA lands.

The Proposed RMP would designate as closed to OHV use 34,250 acres (6%) within 5 of the non-WSA areas not proposed for management of wilderness characteristics (Table 4-33).

Table 4-33. Acres Closed to OHVs in Non-WSA Lands Not Proposed for Management of Wilderness Characteristics in the Proposed RMP

Non-WSA Area Name	Acres Closed
Dirty Devil/French Spring	27,500 acres
Fremont Gorge	1,500 acres
Horseshoe Canyon South	100 acres
Labyrinth Canyon	50 acres
Mount Ellen—Blue Hills	400 acres
Muddy Creek/Crack Canyon	4,700 acres

Some of these non-WSA lands with wilderness characteristics areas are located in SRMAs that are being managed for primitive and unconfined recreational experiences. Other areas as closed because of other resource management decisions.

Because these areas would be closed, no routes would be designated; surface disturbance caused by motorized travel and the resultant impacts to the natural character of the non-WSA areas would not occur. Further, the opportunities for conflict between primitive forms of recreation and motorized uses in these areas would not occur. The natural character and opportunities for solitude and primitive recreation of these non-WSA areas would be unaffected by OHV travel.

OHV open areas near communities would be considered and encouraged for leasing under authority of the R&PP, to allow local management of OHV play areas. Generally, these areas would include previously disturbed areas and would be considered on a case-by-case basis. If an R&PP open area was leased and overlapped non-WSA areas, the action would continue to degrade the natural character of the non-WSA lands with wilderness characteristics, by allowing the surface-disturbing activity from motorized vehicles to continue. The action would also conflict with solitude and primitive recreation experiences because of the sights and sounds of vehicle travel.

Impacts from Lands and Realty

Land Tenure Adjustments

There would be no impacts to the 12 non-WSA areas managed for wilderness characteristics (78,600 acres) from land tenure adjustments. There are no parcels within these areas that have been identified for FLPMA Section 203 sales. Furthermore, the management objectives for the non-WSA lands include retaining the public lands in Federal ownership.

Impacts within the remaining non-WSA areas not proposed for management of wilderness characteristics would be the same as those described under Alternative A. Three parcels (600 acres) of land in the Notom Bench, Red Desert and Dogwater Creek non-WSA areas not managed for wilderness characteristics would be available for FLPMA Section 203 sales: One parcel in the Notom Bench area (80 acres), one parcel in the Red Desert area (160 acres), and one parcel in the Dogwater Creek area (360 acres). All three parcels are interspersed with private lands adjoining the Capitol Reef National Park boundary. Disposal of these lands would take them out of public ownership and allow for development and surface disturbing activities out of BLM's control. The wilderness characteristics could be foregone because the lands would no longer be under BLM control.

Withdrawals

No withdrawals are proposed within the 12 non-WSA areas managed for wilderness characteristics (78,600) acres. Locatable mineral exploration and development would be allowed under the General Mining Law. FLPMA requires BLM to regulate mining activities to prevent undue and unnecessary environmental degradation to resources. As of May 2007, there have been no surface disturbing actions within these non-WSA lands from recent mining related activity.

Within the remaining non-WSA lands not managed for wilderness characteristics, portions of two non-WSA areas would be recommended for withdrawal from mineral entry: Fremont Gorge (1,500 acres) for the protection of the Fremont Gorge Wild and Scenic River Segment, and Muddy Creek/Crack Canyon (2,200 acres) for the protection of the North Caineville ACEC. These 3,700 acres comprise less than 1% of all non-WSA lands. The withdrawal would continue to preserve the naturalness and opportunities for both solitude and primitive forms of recreation in each of these areas, by preventing mining claims and the noise and presence of surface disturbance, people, vehicles, and equipment associated with mining. Wilderness characteristics would be preserved, and naturalness would not be impacted because mining activities would be precluded on these lands. The remaining non-WSA lands not managed for wilderness characteristics, which would be open to mineral entry, would have the same impacts as those described under Alternative N.

Rights-of-Way and Other Land Use Authorizations

Within the Proposed RMP, management decisions for the 12 non-WSA units being managed for wilderness characteristics would make these right-of-way avoidance areas. These areas are to be avoided but may be available for location of rights-of-ways with special stipulations if the proposal meets the goals and objectives of other resources and uses in the land use plan. It is expected and assumed that the avoidance areas would protect, preserve, and maintain the natural character of the non-WSA lands managed for wilderness characteristics.

Three of the 12 non-WSA units being managed for wilderness characteristics are located adjacent to current rights-of-way. Two proposed right-of-way corridors which would be 800 feet wide (400 feet on each side of the centerline) occur along the exterior boundaries of the Red Desert and Little Rockies managed areas. The proposed State Highway 24 right-of-way corridor would occur adjacent to the Red Desert managed area. The boundary for this unit was adjusted to exclude the existing powerline, plus a 1,000 foot buffer for future use and expansion. The proposed State Highway 276 right-of-way corridor

would be adjacent to the Little Rockies managed area. The boundary for the Little Rockies managed area is also offset from the Highway and the opposite side of Highway 276 does not include managed non-WSA lands. The Notom Bench unit is adjacent to the Notom Road and existing powerline right-of-way. The boundary of the unit was adjusted to exclude the existing powerline, plus a 1,000 foot buffer for future use and expansion. Maintenance and use of these existing facilities have not impacted the natural condition of these areas and these uses would continue. Placement of future utility rights-of-way within these corridors could impact the wilderness characteristics along the exterior boundaries. The extent of the impact would vary depending upon the type of facilities proposed. The future use of these rights-of-way along the boundary would not be expected to impact the area as a whole.

The 12 non-WSA units being managed for wilderness characteristics would be available for other land use authorizations (such as film permits, leases and easements) if the use associated with this authorization is compatible with other decisions throughout the RMP. Activities would be analyzed on a case-by-case basis and must be in conformance with the goals and objectives of the non-WSA lands, i.e. naturalness, OHV area designation, VRM management class.

Within the remaining non-WSA lands not managed for wilderness characteristics in the Proposed RMP, two proposed right-of-way corridors which would be 800 feet wide (400 feet on each side of the centerline) would overlay slivers of the exterior boundaries of six non-WSA lands with wilderness characteristics areas. The proposed State Highway 24 right-of-way corridor would overlay the Wild Horse Mesa, Red Desert and Fremont Gorge non-WSA lands with wilderness characteristics. The proposed State Highway 62 right-of-way corridor would overlay slivers of Rocky Ford, Phonolite Hill, and Kingston Ridge non-WSA lands with wilderness characteristics. Placement of future utility rights-of-way within these corridors could impact the wilderness characteristics along the exterior boundaries by creating surface disturbing activities (and possibly placing surface facilities) that would no longer maintain the wilderness characteristics values in those linear corridors. The extent of the impact would vary depending upon the type of facilities proposed.

Under the Proposed RMP, 63,103 acres in six non-WSA lands with wilderness characteristics not proposed for management of wilderness characteristics areas would be protected in part from surface-disturbing activities because they would be within ROW avoidance/exclusion areas (Table 4-34). These areas would be avoided but might be available for location of ROWs with special stipulations if the proposal met the goals and objectives of other resources and uses in the LUP. It is expected and assumed that the avoidance areas would protect the natural character of the non-WSA lands in these areas.

Table 4-34. Acres of Avoidance/Exclusion for Rights-of-Way in Non-WSA Lands Not Managed for Wilderness Characteristics in the Proposed RMP

Name of Non-WSA Land with Wilderness Characteristics	Proposed RMP
Dirty Devil/French Spring	57,500
Flat Tops	3
Fremont Gorge	1,500
Horseshoe Canyon South	1,500
Mount Ellen/Blue Hills	300
Muddy Creek/Crack Canyon	3,800
Total Acres of Avoidance Areas	**64,603**

Non-WSA lands not managed for wilderness characteristics that would remain available for granting of ROWs include all of 18 areas and portions of 6 areas, totaling 539,397 acres. Any surface-disturbing

activity or placement of permanent visible facilities would detract from the natural character of the area and disrupt the setting needed to support primitive forms of recreation.

Impacts to non-WSA lands not managed for wilderness characteristics from issuance of other land use authorizations would be the same as those described under Alternative N.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

There would be no impact to the 12 non-WSA lands with wilderness characteristics managed for wilderness characteristics (78,600 acres) from oil and gas leasing or geophysical exploration activities. The lands would be open to leasing subject to major constraints (NSO).

Lands open to leasing within the remaining non-WSA lands with wilderness characteristics are listed in Table 4-28. There are 604,000 acres of non-WSA lands with wilderness characteristics within the RFD areas that would not be managed for wilderness characteristics. Exploration and development activities could impact wilderness characteristics through the direct disturbance of the natural terrain and consequently impact solitude and opportunities for primitive recreation. Under the Proposed RMP, 142,500 acres, 21% of the non-WSA lands with wilderness characteristics not managed for wilderness characteristics would be open to leasing subject to major constraints (NSO) on the future leases or closed to leasing. If developed, there could be impacts to wilderness characteristics from current leases. There would be no impact to wilderness characteristics from oil and gas activities within these areas from future leases. The remaining non-WSA lands with wilderness characteristics not managed for wilderness characteristics areas (540,100 acres) would remain open to leasing and exploration and development as open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU). This acreage comprises about 79% of non-WSA lands with wilderness characteristics in the RFD areas. In RFD Areas 1 and 2, 438,800 acres of the total 604,000 acres of the non-WSA wilderness lands with wilderness characteristics areas not being managed for wilderness characteristics would remain open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU). The other 84,700 acres are either closed to leasing or open to leasing subject to major constraints (NSO): 61,300 acres in Dirty Devil/French Spring (46% of the total of this non-WSA lands with wilderness characteristics area); 1,500 acres in Fremont Gorge (9%); 3,600 acres in Horseshoe Canyon South (17%); 2,300 acres in Mount Ellen—Blue Hills (5%); 1,300 acres in Mount Hillers (72%); 2,300 acres in Mount Pennell (4%); and 3,800 acres in Muddy Creek/Crack Canyon (6%). It is assumed that the various waivers, exceptions, and modifications under the NSO stipulation would not be granted because they would not be compatible with other resource goals and objectives in these areas.

The Flat Tops and Dirty Devil/French Spring non-WSA lands with wilderness characteristics areas have the greatest percentage of lands leased at this time. Given that the projection for drilling for oil and gas is 3 wells per year for the entire RFD area, and that the non-WSA lands with wilderness characteristics that are open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU) make up 21% of the RFD area, 1 well per year—or 15 wells during a 15-year period—could be drilled within any of these open non-WSA areas. Because well projections under the Proposed RMP are the same as under Alternative N, and because the same percentage of lands in the RFD area generally encompass non-WSA lands with wilderness characteristics under both alternatives, the same analysis would be applied: 1 well per year in this area, or 12 wells during the 15-year RFD scenario. However, one difference under the Proposed RMP is that about half of the acreage for Dirty Devil/French Spring and about 72% of the Mount Hillers non-WSA areas would be closed to leasing or open to leasing subject to major constraints (NSO). This management for the protection of other resources would indirectly protect these non-WSA areas from surface-disturbing activities associated with oil and gas

activities. Therefore, wilderness characteristics values of naturalness and outstanding opportunities for solitude and primitive recreation would be preserved in these areas.

In RFD Area 3, all five non-WSA areas not managed for wilderness characteristics would remain open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU). Because well projections under the Proposed RMP are the same as under Alternative N, and because the same percentage of lands in the RFD area generally encompass these non-WSA lands with wilderness characteristics under both alternatives, the same analysis would be applied: Two wells over the 15-year RFD scenario.

The types of impacts for geophysical activities would be the same as those described under Alternative N. Geophysical exploration activities would be authorized for all non-WSA areas not managed for wilderness characteristics, subject to the oil and gas leasing categories identified above.

Leasable Minerals—Geothermal

None of the 12 Non-WSA lands (78,600 acres) being managed for wilderness characteristics in the proposed RMP would be impacted by Geothermal leasing. The lands would be open to leasing subject to major constraints (NSO); however, these areas do not have high potential for geothermal resources. Geothermal resources are subject to the oil and gas leasing restrictions with some exceptions. It is assumed that the exceptions would likely not be granted because the activities would not be compatible with other resource goals and objectives in these areas.

About two-thirds of the Kingston Ridge non-WSA lands which are not proposed for management protection of wilderness characteristics overlie a high potential area for geothermal resources. Impacts to the Kingston Ridge Non-WSA unit (10,200 acres) would be the same as described under Alternative N.

Leasable Minerals—Coal

Of the 12 Non-WSA units being managed for wilderness characteristics under the Proposed RMP, portions of Mount Pennell, Mount Ellen/Blue Hills and Wildhorse Mesa are likely to contain surface and subsurface coal. Other Non-WSA units not being managed for wilderness characteristics which may overlie mineable coal are Limestone Cliffs and Rock Canyon. Impacts to wilderness characteristics in these Non-WSA units would be the same as described under Alternative N.

Non-Energy Solid Leasable Minerals

Of the 12 Non-WSA units being managed for wilderness characteristics under the Proposed RMP, portions of Labyrinth Canyon. Horseshoe Canyon South and Dirty Devil/French Springs contain the highest potential for sodium or potassium occurrence. Impacts to wilderness characteristics in these Non-WSA units would be the same as described under Alternative N.

Locatable Minerals

Under the Proposed RMP, the 12 Non-WSA units being managed for wilderness characteristics will be open to locatable mineral entry. FLPMA requires BLM to regulate mining activities to prevent undue and unnecessary environmental degradation to resources. Impacts would be the same as described under Alternative N.

Salable Minerals

None of the 12 Non-WSA lands (78,600 acres) being managed for wilderness characteristics in the Proposed RMP would be impacted by Salable Minerals. These lands would have NSO stipulations to salable mineral disposal. It is assumed that the various waivers, exceptions, and modifications under the

NSO stipulation would not be granted because they would not be compatible with other resource goals and objectives in these areas.

For the remaining non-WSA lands not being managed for wilderness characteristics, impacts would be similar to those described under Alternative N. These areas would remain open to salable mineral disposal under standard conditions or minor constraints. Where surface disturbance would occur, naturalness and opportunities for primitive recreation and solitude would be foregone.

Impacts from Special Designations

Wild and Scenic Rivers

Under the PRMP/FEIS, five miles of the Fremont River is designated as suitable for inclusion in the Wild and Scenic Rivers System with a tentative classification of Wild. This five mile segment passes through the Fremont Gorge Non-WSA lands with wilderness characteristics which are not being managed for wilderness characteristics. The protective management for the Wild and Scenic River segment to preserve its outstanding remarkable values would limit or prevent uses and surface disturbances that would detract from the natural character of the Fremont Gorge Non-WSA lands within the wild and scenic river corridor. Protection of river values would prevent uses and surface disturbances that would detract from the natural character of the Fremont Gorge non-WSA lands with wilderness characteristics within the half-mile river corridor (one-quarter mile from the high water mark on each bank of the river segment).

Areas of Critical Environmental Concern

Under the Proposed RMP, none of the 12 non-WSA lands being managed for wilderness characteristics are located in the areas where the Proposed RMP would designate ACECs. A portion (2,200 acres) of the Muddy Creek/Crack Canyon non-WSA lands with wilderness characteristics area lies within the 2,200 acre potential North Caineville Mesa ACEC. This non-WSA area would not be managed for wilderness characteristics but would benefit indirectly from the ACEC designation. As a result of the management prescriptions for the ACEC, these non-WSA lands with wilderness characteristics would be closed to OHV use, open to leasing subject to major constraints (NSO), unavailable for livestock grazing, identified as unsuitable for surface coal mining, identified to acquire inholdings from willing sellers, and recommended for withdrawal from mineral entry. These prescriptions would prevent surface disturbances, limit motorized uses, and protect the natural character and opportunities for solitude and primitive recreation of the non-WSA lands with wilderness characteristics.

Alternative C

Impacts from Soil Resources and Water Resources

Impacts would be similar to those described under Alternative N, except that no surface disturbance or occupancy would be permitted within 660 feet of natural springs, to protect water quality and riparian vegetation. The effects on the naturalness and opportunities for solitude and primitive recreation of non-WSA lands with wilderness characteristics would therefore occur on fewer acres under Alternative C, compared to Alternative N or A or the Proposed RMP.

Impacts from Vegetation

Impacts would be similar to those described under Alternative N, except that no surface disturbance or occupancy would be permitted within approximately 660 feet (based on geo-hydrological, riparian, and other factors) of natural springs to protect riparian vegetation. The effects on the naturalness and opportunities for solitude and primitive recreation of non-WSA lands with wilderness characteristics would therefore occur on fewer acres under Alternative C, compared to Alternative N or A or the Proposed RMP.

Alternative C proposes to treat an average of 26,000 acres of vegetation annually, using only natural processes. The types of impacts that natural vegetation treatments methods would have on naturalness and opportunities for solitude and primitive recreation of the non-WSA lands with wilderness characteristics as would be similar to those described under Alternative N, although less potential area would be affected under Alternative C. Applied over time, Alternative C would not result in enough disturbance to support disturbance-based ecosystems.

Impacts from Cultural Resources

Impacts would be the same as those described under the Proposed RMP.

Impacts from Paleontological Resources

Impacts would be the same as those described under Alternative N.

Impacts from Visual Resources

The types of impacts experienced as a result of VRM would be similar to those described under Alternative N. Under Alternative C, 163,765 acres would be designated as VRM Class I or II in all or parts of 18 non-WSA lands with wilderness characteristics areas, protecting the natural character of those lands. Conversely, 518,835 acres would be designated as VRM Class III or IV, possibly adversely impacting the wilderness characteristics because the objectives of these classes would allow moderate or major modification to the landscape.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative A.

Impacts from Fish and Wildlife

Impacts would be the same as described under Alternative A, with the exception that habitat manipulations to benefit bison and mule deer would use only prescribed fire and biological methods, thereby continuing to protect the naturalness of the non-WSA areas and the opportunities for solitude and primitive recreation. Construction of new range projects that would benefit wildlife could impair the natural character of small areas (generally less than 5 acres) in the non-WSA lands with wilderness characteristics. Such projects could include water developments and fencing of riparian areas.

Under Alternative C 8,200 acres in the Mount Ellen—Blue Hills non-WSA area and 25,400 acres in the Ragged Mountain non-WSA area would be closed to OHV use, to protect crucial bison habitat. This closure would help to maintain the opportunities for solitude and primitive recreation within the non-WSA lands with wilderness characteristics.

Impacts from Wild Horses and Burros

The types of impacts experienced as a result of wild horse and burro management would be similar to those described under the Proposed RMP, except that herd size would be doubled (as would AUM allocations) in the Canyonlands HMA. This management would provide greater opportunities for viewing wild burros, possibly enhancing primitive recreation experiences.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under Alternative C, no specific actions would be prescribed to directly protect the naturalness and opportunities for solitude or primitive recreation of the non-WSA areas, resulting in no specific benefits to non-WSA lands.

Impacts from Forestry and Woodland Products

Alternative C would preclude commercial timber harvest within all non-WSA lands with wilderness characteristics, so impacts associated with these activities would not occur in the non-WSA lands. However, commercial and non-commercial use of forest and woodland products and commercial live plant and seed collection would continue to be allowed on all non-WSA lands with wilderness characteristics. Impacts associated with such permitted activities would be the same as those described under Alternative A.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

ERMAs

Impacts would be the same as those described under Alternative A.

SRMAs

Three of the proposed SRMAs would overlap portions of 14 non-WSA lands with wilderness characteristics areas. There would be 327,560 acres (or 48%) of non-WSA lands within the three SRMAs.

The Dirty Devil/Robbers Roost SRMA would be managed the same as under Alternative A, except that an additional 16,930 acres within the Fiddle Butte non-WSA lands with wilderness characteristics would be incorporated into the SRMA. The subsequent analysis of impacts and protection of the non-WSA lands would be the same as under Alternative A, although the acreage would be augmented.

Under Alternative C, management of the Capitol Reef Gateway SRMA would be different than under the Proposed RMP, in that the interior of the SRMA would be managed to protect its naturalness and primitive recreation opportunities under Alternative C. The 7,770 acres of the Fremont Gorge non-WSA lands with wilderness characteristics that fall within this SRMA would be complemented by this management. The wilderness characteristics values of these non-WSA lands would be protected.

The 533,900 Henry Mountains SRMA would have mixed management strategies for recreational opportunities, as the SRMA would under the Proposed RMP. The same non-WSA lands and acreage would overlap this SRMA under both alternatives, and the same general management would be prescribed. Therefore, the same impacts described for the Proposed RMP would be applicable under Alternative C.

Impacts from Travel Management

Under Alternative C, no non-WSA lands with wilderness characteristics would be designated as open for cross-country travel. OHV use would be limited to designated routes in 473,100 acres (69%) of the 29 non-WSA lands with wilderness characteristics areas. In these areas, 99.7 miles of routes would be designated (Table 4-35).

Table 4-35. OHV Route Designations in Non-WSA Lands with Wilderness Characteristics, Alternative C

Non-WSA Area Name	Miles of Routes
Bull Mountain	0.5 miles
Bullfrog Creek	6.6 miles

Non-WSA Area Name	Miles of Routes
Dirty Devil/French Spring	13.3 miles
Dogwater Creek	0.1 miles
Fiddler Butte	0 miles
Flat Tops	7.5 miles
Fremont Gorge	11.3 miles
Horseshoe Canyon South	0 miles
Jones Bench	0 miles
Kingston Ridge	2.6 miles
Labyrinth Canyon	0 miles
Limestone Cliffs	14 miles
Little Rockies	3.9 miles
Long Canyon	2 miles
Mount Ellen—Blue Hills	2.2 miles
Mount Hillers	0 miles
Mount Pennell	1.8 miles
Muddy Creek/Crack Canyon	2.7 miles
Mussentuchit Badlands	0 miles
Notom Bench	0.8 miles
Phonolite Hill	8.2 miles
Pole Canyon/Hunter Spring	9.6 miles
Ragged Mountain	1.1 miles
Red Desert	1.6 miles
Rock Canyon	1.2 miles
Rocky Ford	2.3 miles
Sweetwater Reef	2.8 miles
Wild Horse Mesa	3.6 miles
Wildcat Knolls	0 miles

Limiting OHV use would confine to designated routes the soil and vegetation disturbance caused by motor vehicles, resulting in no additional change to the natural character of the non-WSA lands. However, the presence and noise of vehicles using these routes would reduce visitors' opportunity to find solitude in the non-WSA areas, especially in proximity to the routes. Motorized uses would conflict with primitive and unconfined recreation opportunities sought in the non-WSA areas.

Under Alternative C, motor vehicles would be allowed to pull off of a designated route as far as 25 feet to either side of the centerline (for parking/staging). Campsites would be designated for motor vehicle use, where compatible with other resources and resource uses. Motorized travel between multiple campsites, establishment of motorized play areas or race tracks, and travel across wet meadows or riparian areas would be prohibited. These actions would allow for parking and camping while confining the area in

which soil and vegetation disturbance would occur, resulting in limited change to the natural character of the non-WSA lands.

Alternative C would designate as closed to OHV use 209,500 acres (31%) within 12 of the 29 non-WSA lands with wilderness characteristic areas (Table 4-36).

Table 4-36. Acres Closed to OHVs in Non-WSA Lands with Wilderness Characteristics, Alternative C

Non-WSA Area Name	Acres Closed
Dirty Devil/French Spring	60,000 acres
Fiddler Butte	12,000 acres
Fremont Gorge	6,700 acres
Horseshoe Canyon South	2,900 acres
Limestone Cliffs	400 acres
Little Rockies	3,600 acres
Mount Ellen—Blue Hills	8,200 acres
Mount Pennell	45,300 acres
Muddy Creek/Crack Canyon	20,200 acres
Ragged Mountain	25,400 acres
Wild Horse Mesa	24,500 acres
Wildcat Knolls	300 acres

Because these areas would be closed, no routes would be designated; surface disturbance caused by motorized travel (and the resultant impacts to the natural character of the non-WSA areas) would not occur. Furthermore, the opportunities for conflict between primitive forms of recreation and motorized uses in these areas would not occur. The natural character and opportunities for solitude and primitive recreation of these non-WSA areas would be unaffected by OHV travel.

Under Alternative C, requests for R&PP leases for OHV open play areas would not be considered, and use of game carriers would not be allowed off of designated routes. These actions would protect the natural character of the non-WSA lands with wilderness characteristics because no new surface-disturbing activity from motorized vehicles would be allowed.

Impacts from Lands and Realty

Land Tenure Adjustments

Impacts would be similar to those described under Alternative N. No lands would be considered for FLPMA Section 203 sales under Alternative C.

Withdrawals

Portions of 12 non-WSA lands with wilderness characteristics would be recommended for withdrawal from mineral entry: Dirty Devil/French Spring (34,100 acres), Fiddler Butte (10,800 acres), Fremont Gorge (3,400 acres), Little Rockies (11,600 acres), Mount Ellen—Blue Hills (6,200 acres), Mount Hillers (1,200 acres), Mount Pennell (11,400 acres), Muddy Creek/Crack Canyon (14,300 acres), Ragged Mountain (15,700 acres), Red Desert (600 acres), Wild Horse Mesa (1,600 acres), and Wildcat Knolls

(100 acres). These 110,900 acres that would be recommended for withdrawal from mineral entry comprise 16% of all non-WSA lands with wilderness characteristics. The withdrawal would continue to preserve the naturalness and opportunities for both solitude and primitive forms of recreation in each of these areas by preventing mining claims and the noise and presence of surface disturbance, people, vehicles, and equipment associated with mining. Wilderness characteristics would be preserved, and naturalness would not be impacted because mining activities would be precluded on these lands. The other 84% of non-WSA lands, which would be open to mineral entry, would have the same impacts as described under Alternative N.

Rights-of-Way and Other Land Use Authorizations

Impacts from ROW corridors would be the same as those described under Alternative A.

Non-WSA lands with wilderness characteristics that would remain available for granting of ROWs would include all of 6 areas and portions of 22 areas, totaling 370,432 acres. Any surface-disturbing activity or placement of permanent facilities would detract from the natural character of the area and disrupt the setting needed to support primitive forms of recreation.

Under Alternative C, 312,168 acres in 23 non-WSA lands with wilderness characteristics areas would be protected, in whole or in part, from surface-disturbing actives because they would be within ROW avoidance areas (Table 4-27). All or portions of the Bull Mountain, Dirty Devil/French Spring, Dogwater Creek, Fiddler Butte, Flat Tops, Fremont Gorge, Horseshoe Canyon South, Jones Bench, Kingston Ridge, Labyrinth Canyon, Limestone Cliffs, Little Rockies, Mount Ellen—Blue Hills, Mount Hillers, Mount Pennell, Muddy Creek/Crack Canyon, Notom Bench, Phonolite Hill, Ragged Mountain, Red Desert, Rocky Ford, Wild Horse Mesa, and Wildcat Knolls non-WSA lands with wilderness characteristics would be within the ROW avoidance areas. These areas would be avoided but might be available for location of ROWs with special stipulations, if the proposal met the goals and objectives of other resources and uses in the LUP. It is expected and assumed that the avoidance areas would protect the natural character of the non-WSA lands in these areas.

Impacts from issuance of other land use authorizations would be the same as those described under Alternative N.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Lands open to leasing within non-WSA lands with wilderness characteristics are listed in Table 4-28. Exploration and development activities could impact wilderness characteristics through the direct disturbance of the natural terrain and consequently would impact opportunities for primitive recreation and solitude. Under Alternative C, 69% of non-WSA lands would be open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU) and 31% would be open to leasing subject to major constraints (NSO) or closed to leasing. The types of impacts experienced as a result of oil and gas activities would be the same as those described under Alternative N.

All or portions of 27 non-WSA lands with wilderness characteristics areas would remain open to leasing and development as open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU). There are 682,600 acres of non-WSA lands with wilderness characteristics within the RFD areas. Of these, 469,200 acres are open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU). This acreage comprises about 69% of non-WSA areas. Thirty-one percent (213,700 acres) of the non-WSA lands with wilderness characteristics spread among 18 areas would be open to leasing subject to major constraints (NSO) on the future leases or closed to leasing. Two of those non-WSA areas (Dogwater Creek and

Notom Bench) would be completely closed to leasing, thus fully protecting the wilderness characteristics values from surface disturbance associated with oil and gas exploration and development.

In RFD Areas 1 and 2, all or portions of 22 non-WSA land with wilderness characteristics areas would remain open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU). There are 645,800 acres of non-WSA lands with wilderness characteristics within the combined RFD areas. Of these, 432,600 acres in 16 non-WSA areas would be open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU). The remaining 213,200 acres would be closed to leasing or open to leasing subject to major constraints (NSO): 62,500 acres in Dirty Devil/French Spring (47% of this non-WSA area); 3,500 acres in Dogwater Creek (100%); 17,300 acres in Fiddler Butte (88%); 3,000 acres in Fremont Gorge (19%); 3,300 acres in Horseshoe Canyon South (16%); 15,600 acres in Little Rockies (67%); 17,800 acres in Mount Ellen—Blue Hills (36%); 1,100 acres in Mount Hillers (61%); 17,900 acres in Mount Pennell (27%); 17,700 acres in Muddy Creek/Crack Canyon (29%); 8,000 acres in Notom Bench (100%); 1,000 acres in Phonolite Hill (13%); 15,400 acres in Ragged Mountain (59%); 2,300 acres in Red Desert (6%); 400 acres in Rocky Ford (6%); and 26,400 acres in Wild Horse Mesa (53%). These non-WSA lands that are open to leasing subject to major constraints (NSO) or closed to leasing comprise approximately 33% of the non-WSA lands with wilderness characteristics in this combined RFD area. It is assumed that the various waivers, exceptions, and modifications under the NSO stipulation would not be granted because they would not be compatible with other resource goals and objectives in these areas.

At this time, the Flat Tops and Dirty Devil/French Spring non-WSA lands with wilderness characteristics areas would have the greatest percentage leased. Given that the projection for drilling for oil and gas is 3 wells per year for the entire RFD area, and that the non-WSA lands with wilderness characteristics that are open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU) make up 17% of the RFD area, one well per year—or 15 wells over a 15-year period—could be drilled within the 22 non-WSA areas that are open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU). Although well projections under Alternative C are the same as those under Alternative N, 8% fewer non-WSA lands are available for oil and gas surface occupancy under Alternative C. Thirty-three percent of the non-WSA areas would be protected from surface-disturbing activities associated with oil and gas exploration and development, thereby preserving the naturalness and outstanding opportunities for solitude and primitive recreation in these areas. Sixty-six percent of the lands would be available for oil and gas exploration and development. However, this area has a low activity level (development potential); the same analysis as under Alternative N would be applied in these non-WSA areas: 1 well per year, or 12 wells during the 15-year RFD scenario. However, one difference under Alternative C is that two areas would be completely protected because they would be closed to leasing, and five areas would have well over 50% of their acreage protected.

In RFD Area 3, all of five non-WSA lands with wilderness characteristics areas would remain open to leasing subject to the standard terms and conditions or open to leasing subject to moderate constraints (TL, CSU), with the exception of 200 acres in Wildcat Knolls that would be closed to leasing. Because well projections under Alternative C would be the same as under Alternative N, and because the same percentage of lands in the RFD area would generally encompass non-WSA lands with wilderness characteristics under both alternatives, the same analysis (two wells during the 15-year RFD scenario) would be applicable.

Impacts for geophysical activities would be the same as those described under Alternative N.

Leasable Minerals—Geothermal

Impacts would be the same as described those described under Alternative N.

Leasable Minerals—Coal

Under Alternative C, 9,270 acres of non-WSA lands with wilderness characteristics, underlain by coal resources suitable for leasing, would be closed to leasing. This acreage includes 8,120 acres within the Mount Pennell non-WSA area (1,690 acres identified for surface mining; 6,430 acres identified for subsurface mining) and 1,150 acres within the Mount Ellen—Blue Hills non-WSA area (610 acres identified for surface mining; 540 acres identified for subsurface mining). All other non-WSA areas with coal resources suitable for leasing could be leased and mined, pending a leasing EIS and further analysis. If leased, 3,230 acres in Mount Ellen—Blue Hills; 4,320 acres in Mount Pennell; and 82 acres in Wild Horse Mesa non-WSA lands could be available for leasing by surface mining methods. Surface mining for the coal resources would entail strip mining operations. Impacts to the wilderness characteristics values would be the same as those described under Alternative N or A or the Proposed RMP. As much as 6% of the Mount Ellen—Blue Hills non-WSA area, as much as 7% of the Mount Pennell non-WSA area, and less than 1% of the Wild Horse Mesa non-WSA area could forego their wilderness characteristics if the total surface coal resource was mined.

In addition to the surface coal resource, both Mount Pennell and Mount Ellen—Blue Hills have subsurface coal resources found suitable for mining. If leased, an additional 4,440 acres in the Mount Ellen—Blue Hills and 18,770 acres in Mount Pennell non-WSA lands could be available for leasing by subsurface mining methods. In the Emery coal field, underground coal resources suitable for leasing by underground mining methods encompass 3,970 acres in the Limestone Cliffs and 64 acres in the Rock Canyon non-WSA lands with wilderness characteristics. The same impacts for subsurface mining described under Alternative N would occur in areas available for coal leasing under Alternative C.

Exploration activities for coal resources could be authorized within any of the non-WSA lands with wilderness characteristics. These activities could include the use of cross-county travel with drilling rigs and field crews, for not more than 2 years, in an identified area. This activity could cause tracks from motorized use, crushed vegetation and compacted soil, and other surface disturbances. Pad construction might be an outcome from deep drilling. This disturbance would be temporary and reclamation would be required. However, during the time that the exploratory activities were occurring, opportunities for solitude and primitive recreation would be affected in the short term, and naturalness would be impacted until the area was reclaimed.

Non-Energy Solid Leasable Minerals

Impacts would be the same as those described under Alternative N.

Locatable Minerals

Impacts would be the same as those described under Alternative N.

Salable Minerals

Impacts would be similar to those described under Alternative N, except that all or portions of 27 non-WSA lands with wilderness characteristics areas would remain open to salable mineral disposal under standard conditions or minor constraints. Of the 682,600 acres of non-WSA lands with wilderness characteristics, 469,200 acres would be open under standard terms or minor constraints. This acreage comprises about 69% of non-WSA areas.

Thirty-one percent (213,700 acres) of non-WSA lands with wilderness characteristics spread among 18 areas would have a NSO stipulation on the future leases, or would be closed to leasing. It is assumed that the various waivers, exceptions, and modifications under the NSO stipulation would not be granted because they would not be compatible with other resource goals and objectives in these areas. Two of the non-WSA areas (Dogwater Creek and Notom Bench) would be completely closed to leasing, thus fully

protecting the wilderness characteristics values from surface disturbance associated with mineral material disposal.

Impacts from Special Designations

Wild and Scenic Rivers

Under Alternative C, 4 of the 29 non-WSA lands with wilderness characteristics areas would intersect with suitable WSR segments, totaling 33.35 miles in those 4 areas. Under this alternative, 19.31 miles of Dirty Devil River, 0.12 miles of No Man's Canyon, 2.83 miles of Robbers Roost Canyon, 0.13 miles of Sam's Mesa Box Canyon, 1.39 miles of Twin Corral Box Canyon, 5 miles of Fremont River (Fremont Gorge), 3.26 miles of Fremont River (Capitol Reef National Park to Caineville Ditch Diversion), and 1.4 miles of Maidenwater Creek would be managed to preserve WSR suitability. Protection of river values would prevent uses and surface disturbances that would detract from the natural character of the Dirty Devil/French Spring, Fremont Gorge, Red Desert, and Little Rockies non-WSA lands with wilderness characteristics areas within the half-mile river corridor (one-quarter mile of the high water mark on each bank of the river segment).

Areas of Critical Environmental Concern

Under Alternative C, 16 ACECs would be designated to protect a variety of relevant and important values; 11 of those ACECs would overlay non-WSA lands with wilderness characteristics. Those ACECs are Badlands, Bull Creek, Dirty Devil, Fremont Gorge/Cockscomb, Henry Mountains, Horseshoe Canyon, Kingston Canyon, Little Rockies, Lower Muddy Creek, Quitchupah, and Thousand Lakes Bench. The management prescriptions for these ACECs would protect naturalness and opportunities for solitude and primitive recreation in all non-WSA lands within the ACECs.

Portions of the Mount Ellen—Blue Hills (6,214 acres), Muddy Creek/Crack Canyon (17,719 acres), Red Desert (834 acres), and Wild Horse Mesa (10,597 acres) non-WSA lands with wilderness characteristics lie within the 88,900 acre potential Badlands ACEC. These non-WSA lands with wilderness characteristics would be unavailable for grazing in the areas of North and South Caineville Mesas. Also, Class A scenery would be managed as VRM Class II. The mesa tops would be closed to OHV use, and the remainder of the ACEC would be limited to designated routes. The areas would be closed to leasing for oil and gas, and the Class A scenery outside the Mount Ellen—Blue Hills WSA would be recommended for withdrawal from mineral entry. These ACEC management prescriptions would reduce surface disturbances and limit motorized uses, thereby protecting the natural character of the non-WSA lands with wilderness characteristics and the opportunities for solitude and primitive recreation. The occasional presence and noise of motorized use from vehicles traveling designated routes would reduce opportunities for solitude and conflict with primitive forms of recreation.

A small portion (321 acres) of the Mount Ellen—Blue Hills non-WSA lands with wilderness characteristics lies within the 4,800 acre potential Bull Creek ACEC. Within the non-WSA lands with wilderness characteristics that overlap the ACEC, motorized use would be limited to designated routes. This prescription would limit motorized uses. However, the occasional presence and noise of motorized use would reduce opportunities for solitude and would conflict with primitive forms of recreation. This conflict would occur only if routes were designated near the non-WSA lands and when vehicles were traveling the designated routes. The management prescriptions would allow fencing for the protection of important cultural sites. These improvements would affect the natural character if placed within the non-WSA lands with wilderness characteristics areas.

Portions of the Dirty Devil/French Spring (58,051 acres), Fiddler Butte (12,027 acres), Flat Tops (8 acres), and Little Rockies (3,190 acres) non-WSA lands with wilderness characteristics lie within the 205,300 acre potential Dirty Devil ACEC. These non-WSA lands with wilderness characteristics would

be designated as VRM Class II in any areas containing Class A scenery, would be unavailable for livestock grazing in Beaver Wash, and would be closed to OHV use or limited to designated trails (to protect scenic values). VRM Class I or II areas would be designated ROW avoidance areas, inholdings would be acquired from willing sellers, Class A scenery would be recommended for withdrawal from mineral entry, and VRM Class II areas would be open for leasing subject to major constraints (NSO) for oil and gas. These ACEC management prescriptions would reduce surface disturbances and limit motorized uses, thereby protecting the natural character of the non-WSA lands with wilderness characteristics and the opportunities for solitude and primitive recreation. The management prescriptions would allow fencing of riparian areas to exclude livestock, fencing for the protection of important cultural sites, water developments to benefit desert bighorn sheep, and camping facilities. These improvements could affect the natural character if placed within the non-WSA lands with wilderness characteristics areas. In areas in which OHV use would be limited to designated routes, the occasional presence and noise of motorized use would reduce opportunities for solitude and would conflict with primitive forms of recreation. This conflict would occur when routes were designated near or within non-WSA lands and when vehicles were traveling the designated routes.

The Fremont Gorge non-WSA lands with wilderness characteristics (15,941 acres) lie within the 34,300 acre potential Fremont Gorge/Cockscomb ACEC. These non-WSA lands with wilderness characteristics would be designated as VRM Class II in any areas containing Class A scenery, OHV use would be limited to designated routes (to protect scenic values), Class A scenery would be recommended for withdrawal from mineral entry, and VRM Class II areas would be open leasing subject to major constraints (NSO) for oil and gas. These ACEC management prescriptions would reduce surface disturbances and limit motorized uses, thereby protecting the natural character of the non-WSA lands with wilderness characteristics and the opportunities for solitude and primitive recreation. The management prescriptions would allow fencing for the protection of important cultural sites, possibly affecting the natural character if placed within the non-WSA lands with wilderness characteristics areas. In areas in which motorized use would be limited to designated routes, the occasional presence and noise of motorized use would reduce opportunities for solitude and would conflict with primitive forms of recreation. This conflict would occur when vehicles were traveling the designated routes.

All of the Mount Hillers non-WSA lands with wilderness characteristics (1,757 acres) and portions of the Bull Mountain (2,821 acres), Mount Ellen—Blue Hills (17,771 acres), Mount Pennell (45,731 acres), and Ragged Mountain (24,408 acres) non-WSA lands with wilderness characteristics lie within the 288,200 acre potential Henry Mountains ACEC. These non-WSA lands with wilderness characteristics would be designated as VRM Class II in any areas containing Class A scenery and would be closed to OHV use or limited to designated routes. No Man's Mesa would be closed to OHV use, VRM Class I or II areas would be designated ROW avoidance areas, and inholdings would be acquired from willing sellers. The ACEC prescriptions also recommend withdrawing No Man's Mesa and Class A scenery from mineral entry and designating VRM Class II areas and No Man's Mesa as closed to leasing for oil and gas. These management prescriptions would reduce surface disturbances and limit motorized uses, thereby protecting the natural character of the non-WSA lands with wilderness characteristics and the opportunities for solitude and primitive recreation. The management prescriptions would allow for maintenance of erosion control structures, fencing (to protect important cultural sites), and manipulation of habitat and range improvements (to benefit wildlife), all of which could affect the natural character if placed within the non-WSA lands with wilderness characteristics areas. In areas in which motorized use would be limited to designated routes, the occasional presence and noise of motorized use would reduce opportunities for solitude and conflict with primitive forms of recreation. This conflict would occur when routes were designated near or within non-WSA lands and when vehicles were traveling the designated routes.

Portions of the Horseshoe Canyon South (2,934 acres) and Labyrinth Canyon (1 acre) non-WSA lands with wilderness characteristics lie within the 40,900 acre (RFO portion only) potential Horseshoe Canyon

ACEC. These non-WSA lands with wilderness characteristics would be designated as VRM Class II in any areas containing Class A scenery and closed to OHV use or limited to designated routes. No new ROWs would be authorized in VRM Class I and II areas, inholdings would be acquired from willing sellers, Class A scenery would be recommended for withdrawal from mineral entry, and VRM Class II areas would be managed as open to leasing subject to major constraints (NSO) for oil and gas. These ACEC management prescriptions would reduce surface disturbances and limit motorized uses, thereby protecting the natural character of the non-WSA lands with wilderness characteristics and the opportunities for solitude and primitive recreation. The management prescriptions would allow fencing to protect important cultural sites and fencing of riparian areas to exclude livestock. Fencing could affect the natural character if fences were placed within the non-WSA lands with wilderness characteristics areas. In areas in which motorized use would be limited to designated trails, the occasional presence and noise of motorized use would reduce opportunities for solitude and conflict with primitive forms of recreation. This conflict would occur when routes were designated near or within non-WSA lands and when vehicles were traveling the designated routes.

All of the Phonolite Hill (7,908 acres) non-WSA lands with wilderness characteristics and portions of the Kingston Ridge (2,126 acres) and Rocky Ford (6,429 acres) non-WSA lands with wilderness characteristics lie within the 22,100 acre potential Kingston Canyon ACEC. Within the non-WSA lands with wilderness characteristics areas, inholdings in the riparian corridor would be acquired from willing sellers, and motorized use would be limited to designated routes and limited seasonally to protect wildlife habitat. This prescription would limit motorized uses. However, the occasional presence and noise of motorized use would reduce opportunities for solitude and would conflict with primitive forms of recreation. This conflict would occur only if routes were designated near the non-WSA lands and when vehicles were traveling the designated routes.

A portion (8,692 acres) of the Little Rockies non-WSA lands with wilderness characteristics lies within the 49,200 acre potential Little Rockies ACEC. These non-WSA lands with wilderness characteristics would be designated as VRM Class II in any areas containing Class A scenery. OHV use would be limited to designated routes, no new ROWs would be authorized in areas containing Class A scenery, inholdings would be acquired from willing sellers, areas containing Class A scenery would be recommended for withdrawal from mineral entry, and VRM Class II areas would be managed as closed to leasing subject to major constraints (NSO) for oil and gas. These ACEC management prescriptions would reduce surface disturbances and limit motorized uses, thereby protecting the natural character of the non-WSA lands with wilderness characteristics and opportunities for solitude and primitive recreation. The management prescriptions would allow range improvements, primarily water developments, to benefit wildlife. If placed within the non-WSA lands with wilderness characteristics areas, these improvements could affect the natural character. The management prescriptions would limit motorized uses. However, the occasional presence and noise of motorized use would reduce opportunities for solitude and would conflict with primitive forms of recreation. This conflict would occur only if routes were designated near the non-WSA lands and when vehicles were traveling the designated routes.

A portion (15,778 acres) of the Wild Horse Mesa non-WSA lands with wilderness characteristics area lies within the 16,200 acre (RFO portion only) potential Lower Muddy Creek ACEC. These non-WSA lands with wilderness characteristics would be designated as VRM Class II in any areas containing Class A scenery and closed to OHV use or limited to designated routes. ROWs would be authorized consistent with VRM Class II objectives, inholdings would be acquired from willing sellers, and the areas would be closed to leasing for oil and gas. These ACEC management prescriptions would reduce surface disturbances and limit motorized uses, thereby protecting the natural character of the non-WSA lands with wilderness characteristics and the opportunities for solitude and primitive recreation. The management prescriptions would limit motorized uses. However, the occasional presence and noise of motorized use would reduce opportunities for solitude and would conflict with primitive forms of

recreation. This conflict would occur only if routes were designated near the non-WSA lands and when vehicles were traveling the designated routes.

A portion (27 acres) of the Wildcat Knolls non-WSA lands with wilderness characteristics lies within the 180 acre potential Quitchupah ACEC. Within the non-WSA lands with wilderness characteristics that overlap the ACEC, motorized use would be limited to designated routes. This prescription would limit motorized uses. However, the occasional presence and noise of motorized use would reduce opportunities for solitude and would conflict with primitive forms of recreation. This conflict would occur only if routes were designated near the non-WSA lands and when vehicles were traveling the designated routes. The management prescriptions would allow fencing to protect important cultural sites. If placed within the non-WSA lands with wilderness characteristics areas, these improvements could affect the natural character of those lands.

Portions of the Jones Bench (43 acres) and Limestone Cliffs (385 acres) non-WSA lands with wilderness characteristics areas lie within the 500 acre potential Thousand Lakes Bench ACEC. These non-WSA lands with wilderness characteristics would be designated as closed to OHV use or would limit OHV use to designated routes. These prescriptions would limit motorized uses. However, the occasional presence and noise of motorized use would reduce opportunities for solitude and would conflict with primitive forms of recreation. This conflict would occur only when vehicles were traveling the designated routes. The management prescriptions would allow fencing to protect important cultural sites. If placed within the non-WSA lands with wilderness characteristics areas, these improvements could affect the natural character of those lands.

Alternative D

Impacts from Soil Resources and Water Resources

Impacts would be the same as those described under Alternative C.

Impacts from Vegetation

Impacts would be the same as those described under Alternative C.

Impacts from Cultural Resources

Impacts would be the same as those described under the Proposed RMP.

Impacts from Paleontological Resources

Impacts would be the same as those described under Alternative N.

Impacts from Visual Resources

Under Alternative D, 682,600 acres in all of the 29 non-WSA lands with wilderness characteristics would be designated as VRM Class I, protecting the natural character of those lands and the settings required to support opportunities for solitude and primitive forms of recreation.

Impacts from Special Status Species

Impacts would be similar to those described under Alternative A. However, under Alternative D, surface-disturbing activities would not be permitted on non-WSA lands with wilderness characteristics, thereby protecting those values.

Impacts from Fish and Wildlife

Impacts would be similar to those described under Alternative C. However, under Alternative D, habitat manipulations would be limited to fire or biological methods that would not impact the naturalness of the

non-WSA areas or affect the opportunities for solitude and primitive recreation in these areas. In addition, construction of new range projects that benefit wildlife would not be considered unless they meet VRM Class I objectives and meet the goals and objectives of protecting wilderness characteristics values. This management would continue to protect the natural values of the non-WSA lands with wilderness characteristics.

Under Alternative D, all lands within the Mount Ellen—Blue Hills, Bull Mountain, Ragged Mountain, Mount Hillers, and Mount Pennell areas would be closed to OHV use, to protect crucial bison habitat. This closure would help to maintain the opportunities for solitude and primitive recreation within these non-WSA lands with wilderness characteristics.

Impacts from Wild Horses and Burros

Impacts would be the same as those described under Alternative C.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under Alternative D, all non-WSA lands with wilderness characteristics would be managed by the following prescriptions:

- Designate VRM Class I
- Manage for primitive and semi-primitive non-motorized recreation
- Close to OHV use
- Make unavailable for disposal
- Designate ROW exclusion areas
- Recommend for withdrawal from mineral entry
- Close to leasing for oil and gas
- Close to disposal of salable minerals (mineral materials)
- Make unavailable for further consideration for coal leasing

These prescriptions would prevent surface disturbances that would degrade the natural character of the non-WSA areas, prevent surface disturbances and uses that would be incompatible with primitive recreation activities, and protect the setting needed to support the experience of solitude.

Impacts from Forestry and Woodland Products

Under Alternative D, all 682,600 acres of non-WSA lands with wilderness characteristics in the 29 areas within the RFO would be restricted from commercial and non-commercial timber harvest, commercial and non-commercial use of forest and woodland products, and commercial live plant and seed collection. All wilderness characteristics values would therefore be protected from this activity and would maintain the natural character and opportunities for solitude and primitive recreation.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

ERMAs

Impacts would be similar to those described under Alternative A. However, no large group areas would be designated for campsites and group events in the Mount Pennell non-WSA area, thereby protecting the naturalness and opportunities for solitude and primitive recreation in this area.

SRMAs

Seven of the proposed SRMAs would overlap portions of 24 non-WSA lands with wilderness characteristics areas. There would be 634,070 acres (or 93%) of non-WSA lands within the seven SRMAs. The Capitol Reef, Dirty Devil/French Spring, East Fork Sevier River, Henry Mountains, Labyrinth Canyon, Little Rockies, and San Rafael Swell SRMAs would overlap all of the Bullfrog Creek, Dogwater Creek, Long Canyon, Mount Ellen—Blue Hills, Mount Pennell, Notom Bench, Red Desert, Dirty Devil/French Spring, Fiddler Butte, Flat Tops, Sweetwater Reef, Jones Bench, Kingston Ridge, Phonolite Hill, Rocky Ford, Bull Mountain, Mount Hillers, Ragged Mountain, Horseshoe Canyon South, Labyrinth Canyon, Little Rockies, Muddy Creek/Crack Canyon, and Wild Horse Mesa non-WSA lands with wilderness characteristics areas and about half of the Fremont Gorge non-WSA area.

Under each SRMA, management objectives would be to protect and preserve the wilderness characteristics values of the non-WSA lands. This management would include closing lands to OHV use and providing for primitive recreational experiences. All wilderness characteristics values would therefore be maintained under Alternative D.

Travel Management

Alternative D would designate all 682,600 acres (100%) of the 29 non-WSA lands with wilderness characteristic areas as closed to OHV use. Because these areas would be closed, no routes would be designated; surface disturbance caused by motorized travel, and the resultant impacts to the natural character of the non-WSA areas, would not occur. Further, the opportunities for conflict between primitive forms of recreation and motorized uses in these areas would not occur. The natural character and opportunities for solitude and primitive recreation of these non-WSA areas would be unaffected by OHV travel.

By closing all non-WSA lands with wilderness characteristics to OHV travel, Alternative D would provide the most protection for the naturalness and opportunities for solitude and primitive recreation of these lands.

Impacts from Lands and Realty

Land Tenure Adjustments

Under Alternative D, no non-WSA lands would be considered for sale or other land tenure adjustments because to do so would not be in conformance with the Proposed RMP decisions to protect non-WSA lands with wilderness characteristics. This management would continue to protect and preserve the wilderness characteristics values of these areas.

Withdrawals

Under Alternative D, all 682,600 acres within non-WSA lands with wilderness characteristics would be recommended for withdrawal from mineral entry. This withdrawal would preclude surface-disturbing activities that would be associated with mining and that would impact wilderness characteristics. The withdrawal would continue to preserve the naturalness and opportunities for both solitude and primitive forms of recreation in each of the non-WSA areas, by preventing mining claims and the noise and presence of surface disturbance, people, vehicles, and equipment associated with mining.

Should exploration or development be proposed on the existing mining claims in the 13 non-WSA lands with wilderness characteristics, then those values would be impacted as described under Alternative N.

Rights-of-Way and Other Land Use Authorizations

Under Alternative D, no ROW corridors that would impact non-WSA lands with wilderness characteristics would be designated, and all non-WSA lands would be managed as ROW exclusion areas (Table 4-27). Exclusion from future ROWs would protect the natural character in all these lands. Protection of the natural landscape would also preserve the setting needed to support primitive forms of recreation and experiences of solitude. The same protections would prevent corridor designations within any of the non-WSA lands with wilderness characteristics, thus protecting those values.

Under Alternative D, only land use authorizations that meet this alternative's Proposed RMP objective to protect non-WSA lands with wilderness characteristics would be authorized. Thus, the natural character of these lands would be protected, and the setting needed to support primitive forms of recreation and experiences of solitude would be preserved.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Lands open to leasing for oil and gas within non-WSA lands with wilderness characteristics are illustrated in Table 4-28. Exploration and development activities could impact wilderness characteristics through the direct disturbance of the natural terrain and consequent impacts on opportunities for solitude and primitive recreation.

Under Alternative D, all non-WSA lands with wilderness characteristics would be closed to leasing. However, existing leases would still remain in 4 of the 29 non-WSA lands with wilderness characteristics areas. All these leases would be within RFD Areas 1 and 2. Development of these leases could compromise wilderness characteristics values in these areas. The following is a breakdown of how or where that might occur, based on the RFD area and the predicted surface disturbance for oil and gas activity for Alternative D. Those non-WSA lands with wilderness characteristics that are not currently leased (including all of 20 areas in RFD Areas 1 and 2 and all of the areas in RFD Area 3) would be fully protected under the leasing closure of this alternative. This protection would preserve the naturalness of the areas and would maintain the outstanding opportunities for primitive recreation and solitude. When the leases within the four non-WSA areas expire, then those lands would be closed to any new leasing.

In RFD Areas 1 and 2, four non-WSA wilderness characteristics areas have portions under existing leases; these portions comprise 51,510 acres. There are 645,800 acres of non-WSA lands with wilderness characteristics within this combined RFD area. The Flat Tops and Dirty Devil/French Spring non-WSA lands have the greatest percentage of area leased at this time. Given that under Alternative D, the projection for drilling for oil and gas is 45 wells (or about 3 wells per year) for the entire RFD area and that 8% of the lands the RFD area encompasses are in non-WSA lands with wilderness characteristics that are leased (or 2% of the RFD area), 1 well could be drilled within the currently leased non-WSA areas. This action could disturb as much as 12 acres during the life of the plan. The leases, if not developed or held in production, would expire after 10 years. Development of any leases within the non-WSA areas could cause that portion to lose their natural character and opportunities for solitude and primitive recreation because of exploration for and development of oil and gas resources. Because of the small amount of acreage projected to be disturbed and the one well projected for the non-WSA leased lands in this RFD, it is anticipated that only a small portion of any of the non-WSA lands with wilderness characteristics could lose its wilderness characteristics. Far less than one percent of any of the non-WSA areas would be at risk of loss of wilderness characteristics.

In RFD Area 3, all 36,800 acres of non-WSA lands with wilderness characteristics would be closed to leasing. No oil and gas related surface-disturbing activities would be allowed, and wilderness values would be protected.

All non-WSA lands with wilderness characteristics would be closed to geophysical exploration, thereby protecting the wilderness characteristics of these areas.

Leasable Minerals—Geothermal

All non-WSA lands with wilderness characteristics would be closed to geothermal leasing, thereby protecting the wilderness characteristics from surface-disturbing activities.

Leasable Minerals—Coal

Under Alternative D, coal leasing or exploratory activities would not be considered within any non-WSA lands with wilderness characteristics. This management would protect those non-WSA lands with coal resources suitable for leasing (Mount Pennell, Mount Ellen—Blue Hills, Limestone Cliffs, and Rock Canyon) from surface-disturbing activities related to coal resources. Naturalness and opportunities for solitude and primitive recreation would be maintained.

Non-Energy Solid Leasable Minerals

Leasing would not be authorized for non-energy solid leasable minerals, thereby protecting the wilderness characteristics values.

Locatable Minerals

Impacts would be the same as those described under Alternative N.

Salable Minerals

Under Alternative D, all lands within the non-WSA lands with wilderness characteristics would be closed to salable mineral disposal. These areas would be fully protected under the leasing closure under this alternative. This management would preserve the naturalness of the areas and would maintain the outstanding opportunities for primitive recreation and solitude.

Impacts from Special Designations

Wild and Scenic Rivers

Under Alternative D, 4 of the 29 non-WSA land areas intersect with suitable WSR segments, totaling 33.35 miles in those 4 areas. There are 19.31 miles of Dirty Devil River, 0.12 miles of No Man's Canyon, 2.83 miles of Robbers Roost Canyon, 0.13 miles of Sam's Mesa Box Canyon, 1.39 miles of Twin Corral Box Canyon, 5 miles of Fremont River (Fremont Gorge), 3.26 miles of Fremont River (Capitol Reef National Park to Caineville Ditch Diversion), and 1.4 miles of Maidenwater Creek that would be managed to preserve their WSR suitability. Protection of river values would prevent uses and surface disturbances that would detract from the natural character of the Dirty Devil/French Spring, Fremont Gorge, Red Desert, and Little Rockies non-WSA lands with wilderness characteristics within the half-mile river corridor (one-quarter mile of the high water mark on each bank of the river segment).

Alternative D would provide the most long-term protection of the naturalness and opportunities for solitude and primitive recreation of non-WSA lands with wilderness characteristics because it recommends the most miles of waterways for protection in the NWSRS. However, Alternative D would also allow for specific management to protect non-WSA lands with wilderness characteristics, in addition to management of the suitable WSRs.

Areas of Critical Environmental Concern

Under Alternative D, 16 ACECs would be designated to protect a variety of relevant and important values; 11 of these ACECs would overlay non-WSA lands with wilderness characteristics. Those ACECs

are Badlands, Bull Creek, Dirty Devil, Fremont Gorge/Cockscomb, Henry Mountains, Horseshoe Canyon, Kingston Canyon, Little Rockies, Lower Muddy Creek, Quitchupah, and Thousand Lakes Bench. The management prescriptions for these ACECs would protect naturalness and opportunities for solitude and primitive recreation in all the non-WSA lands within the ACECs.

Portions of the Mount Ellen—Blue Hills (6,214 acres), Muddy Creek/Crack Canyon (17,719 acres), Red Desert (834 acres), and Wild Horse Mesa (10,597 acres) non-WSA lands with wilderness characteristics lie within the 88,900 acre potential Badlands ACEC. These non-WSA lands with wilderness characteristics would be unavailable for grazing in the areas of North Caineville Mesa and South Caineville Mesa, would allow no fencing or other surface-disturbing activities, would be designated as VRM Class I, and would be closed to leasing for oil and gas. Furthermore, the mesa tops and wilderness characteristics lands would be closed to OHV use and the remainder of the ACEC would be limited to designated routes; and the wilderness characteristic lands and Class A scenery outside the Mount Ellen—Blue Hills WSA would be recommended for withdrawal from mineral entry. These management prescriptions would reduce surface disturbances and limit motorized uses, thereby protecting the natural character of the non-WSA lands with wilderness characteristics and the opportunities for solitude and primitive recreation.

A small portion (321 acres) of the Mount Ellen—Blue Hills non-WSA lands with wilderness characteristics lies within the 4,800 acre potential Bull Creek ACEC. The non-WSA lands with wilderness characteristics would be closed to OHV use, and no fencing or other surface-disturbing activities would be allowed. These management prescriptions would reduce surface disturbances and limit motorized uses, thus protecting the natural character of the non-WSA lands with wilderness characteristics and the opportunities for solitude and primitive recreation.

Portions of the Dirty Devil/French Spring (58,051 acres), Fiddler Butte (12,027 acres), Flat Tops (8 acres), and Little Rockies (3,190 acres) non-WSA lands with wilderness characteristics lie within the 205,300 acre potential Dirty Devil ACEC. These non-WSA lands with wilderness characteristics would be designated as VRM Class I, would be unavailable for livestock grazing in Beaver Wash, would be closed to OHV use, would designate VRM Class I or II areas as ROW avoidance areas, would be recommended for withdrawal from mineral entry, and would be closed to leasing from oil and gas. Inholdings in these non-WSA lands would be acquired from willing sellers, No fencing of riparian areas or cultural sites and no water developments or camping facilities would be allowed within the wilderness characteristics lands. These management prescriptions would reduce surface disturbances and limit motorized uses, thus protecting the natural character of the non-WSA lands with wilderness characteristics and the opportunities for solitude and primitive recreation.

The Fremont Gorge (15,941 acres) non-WSA lands with wilderness characteristics area lies within the 34,300 acre potential Fremont Gorge/Cockscomb ACEC. These non-WSA lands with wilderness characteristics would be designated as VRM Class I, closed to OHV use, recommended for withdrawal from mineral entry, and closed to leasing from oil and gas. No fencing or other surface-disturbing activities would be allowed. These management prescriptions would reduce surface disturbances and limit motorized uses, thus protecting the natural character of the non-WSA lands with wilderness characteristics and the opportunities for solitude and primitive recreation.

All of the Mount Hillers (1,757 acres) non-WSA lands with wilderness characteristics area and portions of the Bull Mountain (2,821 acres), Mount Ellen—Blue Hills (17,771 acres), Mount Pennell (45,731 acres), and Ragged Mountain (24,408 acres) non-WSA lands with wilderness characteristics areas lie within the 288,200 acre potential Henry Mountains ACEC. These non-WSA lands with wilderness characteristics would be designated as VRM Class I and closed to OHV use. VRM Class I or II areas would be designated as ROW avoidance areas, and inholdings would be acquired from willing sellers.

The ACEC prescriptions also recommend withdrawing non-WSA lands with wilderness characteristics, No Man's Mesa, and areas with Class A scenery from mineral entry and designating wilderness characteristic lands, VRM Class II areas, and No Man's Mesa as closed to leasing for oil and gas. No maintenance of erosion-control structures, fencing of cultural sites, manipulation of habitat, or range improvements would be allowed within the wilderness characteristic lands. These management prescriptions would reduce surface disturbances and limit motorized uses, thus protecting the natural character of the non-WSA lands with wilderness characteristics and the opportunities for solitude and primitive recreation.

A portion (2,934 acres) of the Horseshoe Canyon South non-WSA lands with wilderness characteristics area lies within the 40,900 acre (RFO portion only) potential Horseshoe Canyon ACEC. These non-WSA lands with wilderness characteristics would be designated as VRM Class I, closed to OHV use, recommended for withdrawal from mineral entry, and closed to leasing from oil and gas. New ROWs in VRM Class I and II areas would not be authorized, and inholdings would be acquired from willing sellers, No fencing of cultural sites or riparian areas would be allowed within the wilderness characteristics lands. These management prescriptions would reduce surface disturbances and limit motorized uses, thus protecting the natural character and opportunities for solitude and primitive recreation of the non-WSA lands with wilderness characteristics.

All of the Phonolite Hill non-WSA lands with wilderness characteristics area (7,908 acres) and portions of the Kingston Ridge (2,126 acres) and Rocky Ford (6,429 acres) non-WSA lands with wilderness characteristics lie within the 22,100 acre potential Kingston Canyon ACEC. Within the non-WSA lands with wilderness characteristics areas, inholdings within the riparian corridor would be acquired from willing sellers, and the wilderness characteristics lands would be closed to OHV use. These management prescriptions would reduce surface disturbances and limit motorized uses, thus protecting the natural character of the non-WSA lands with wilderness characteristics and the opportunities for solitude and primitive recreation.

A portion (8,692 acres) of the Little Rockies non-WSA lands with wilderness characteristics area lies within the 49,200 acre potential Little Rockies ACEC. These non-WSA lands with wilderness characteristics would be designated as VRM Class I, closed to OHV use, recommended for withdrawal from mineral entry, and closed to leasing from oil and gas. New ROWs in areas containing Class A scenery or in wilderness characteristics lands would not be authorized, inholdings would be acquired from willing sellers, and no surface-disturbing activities would be allowed. These management prescriptions would reduce surface disturbances and limit motorized uses, thus protecting the natural character and the opportunities for solitude and primitive recreation of the non-WSA lands with wilderness characteristics.

A portion (15,778 acres) of the Wild Horse Mesa non-WSA lands with wilderness characteristics lies within the 16,200 acre (RFO portion only) potential Lower Muddy Creek ACEC. These non-WSA lands with wilderness characteristics would be designated as VRM Class I, closed to OHV use, and closed to leasing from oil and gas. New ROWs would be avoided, and inholdings would be acquired from willing sellers, These management prescriptions would reduce surface disturbances and limit motorized uses, thus protecting the natural character of the non-WSA lands with wilderness characteristics and the opportunities for solitude and primitive recreation.

A portion (27 acres) of the Wildcat Knolls non-WSA lands with wilderness characteristics lies within the 180 acre potential Quitchupah ACEC. These non-WSA lands with wilderness characteristics would be closed to OHV use, and no fencing or other surface-disturbing activities would be allowed for the protection of cultural sites. These management prescriptions would reduce surface disturbances and limit motorized uses, thus protecting the natural character of the non-WSA lands with wilderness characteristics and the opportunities for solitude and primitive recreation. A portion of the Jones Bench

(43 acres) and Limestone Cliffs (385 acres) non-WSA lands with wilderness characteristics lie within the 500 acre potential Thousand Lakes Bench ACEC. These non-WSA lands with wilderness characteristics would be designated as closed to OHV use, and no fencing or other surface-disturbing activities would be allowed for the protection of cultural sites. These management prescriptions would reduce surface disturbances and limit motorized uses, thus protecting the natural character of the non-WSA lands with wilderness characteristics and the opportunities for solitude and primitive recreation.

Because it designates the most acres as ACECs, Alternative D would provide the most long-term protection to the naturalness and opportunities for solitude and primitive recreation of non-WSA lands with wilderness characteristics. However, Alternative D would also allow for specific management to protect non-WSA lands with wilderness characteristics, in addition to management of the ACECs.

4.4 IMPACTS TO RESOURCE USES

4.4.1 Forestry and Woodland Products

This analysis addresses potential impacts on forest and woodland products harvest, caused by implementing the management actions under the alternatives described in Chapter 2. This analysis focuses on those management actions that place limitations or affect the quantity or quality of products within the RFO. Impacts on forest and woodland health are discussed in the Impacts to Vegetation section of this chapter. In the absence of quantitative data, best professional judgment was used, and impacts are sometimes described by using ranges of potential impacts or in qualitative terms, if appropriate.

Methods and Assumptions

The analysis is based on the following assumptions:

- Several traditional woodland products (e.g., Christmas trees, posts, poles) may be harvested from tree species growing on sites not classified as forest or woodland.
- Demand for forest and woodland products is not anticipated to grow substantially during the planning period.
- Supply of forestry and woodland products would continue to substantially exceed demand.

Environmental Consequences

Impacts to forestry and woodlands would likely result from actions proposed under the following resource programs:

- Air Quality
- Soil Resources and Water Resources
- Visual Resources
- Special Status Species
- Fish and Wildlife
- Fire and Fuels Management
- Non-WSA Lands with Wilderness Characteristics
- Forestry and Woodland Products
- Recreation
- Travel Management
- Minerals and Energy
- Special Designations.

Other programs were determined to have little or no impact on forestry and woodland products. There are no WSA decisions that would impact forestry and woodland products.

Alternative N: No Action

Impacts from Air Quality

Proposed decisions for air would have minimal effect on harvesting of forest and woodland products. Burning of slash piles could be necessary, following some harvesting projects. Air quality requirements would need to be considered and smoke management would be implemented to meet air quality standards.

Impacts from Soil Resources and Water Resources

Current demand for forest and woodland products is low, and demand is expected to remain stable because of the remoteness of resources. In general, decisions proposed for managing soil and water resources would also improve forest and woodland health by providing for overall ecosystem health through the continued implementation of the *Fundamentals of Rangeland Health.* Based on current levels of forest and woodland harvest and limited areas available for harvest, road and trail construction (which would result in new soil disturbance) is not expected. Therefore, the impacts that soils and water decisions would cause to forest and woodland products harvesting under Alternative N would be minimal.

Impacts from Visual Resources

Under Alternative N, 529,500 acres would be managed to meet VRM Class II objectives, of which 446,900 acres are within WSAs in which forest and woodland harvest is prohibited. Managing the 82,600 acres outside of the WSAs to meet VRM Class II objectives could alter the size, type, and location of forest and woodland product harvest or forest health projects. However, not all of these 82,600 acres have forest and woodland resources. The remainder of the RFO (1,598,500 or 75%) would be managed as VRM Classes III and IV, which would allow for moderate (Class III) or major (Class IV) changes to the landscape. This management would allow flexibility for forest and woodland products harvest and management of forests and woodlands in most of the RFO lands to meet the objectives of the Healthy Forest Restoration Act (HFRA) of 2003.

Impacts from Special Status Species

Proposed management for SSS habitats could limit forest and woodland product harvest, but acreage amounts would be minimal. The majority of SSS present in the lands managed by the RFO either do not inhabit forest and woodland areas, are protected by topography, or inhabit WSAs in which harvest would not be allowed. Any forest management activities would necessarily be designed to avoid, mitigate, or improve the habitat for SSS.

Impacts from Fish and Wildlife

Proposed decisions for fish and wildlife could restrict some harvest by location or season. Seasonal or spatial restrictions for bison, mule deer, and elk could impact the success of commercial product harvest and forest health projects. Prohibiting surface-disturbing activities from November 1 through May 15 (6 and one-half months each year) could make it difficult to complete some projects. Seasonal or spatial restrictions for other wildlife species would not affect the harvesting of forest and woodland products because few resources are located in these habitat areas. Habitat treatment projects could indirectly improve forest and woodland health and increase the availability of some woodland products, depending on the treatment method used. Overuse of wildland or prescribed fire as a treatment method could result in a reduction of woodland products for the public because of the uncontrollable nature of fire and the possible elimination of prime woodland product areas that could otherwise be protected. In some cases, forest management could be used as a tool for improving wildlife habitat, resulting in a benefit for both resources.

Impacts from Fire and Fuels Management

Suppressing all wildland fires could increase seedling/sapling survival, thus increasing stand density. The existing trend of pinyon-juniper woodland encroachment would continue under full fire suppression and fewer hazardous fuels treatment acres. Overall, this trend could lead to increasing fuel loading and the potential for uncharacteristically large or intense wildfires that would reduce the availability of forest and woodland products.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under Alternative N.

Impacts from Forestry and Woodland Products

Management actions implemented to support the objectives of HFRA would increase the long-term health and productivity of forest and woodlands and indirectly increase resistance to insect pest infestations. Current management of timber and woodland products has not effectively improved forest and woodland health and has restricted areas available to harvest. The current trends would continue, possibly leading to hazardous fuels, insect infestations, and continued encroachment of pinyon-juniper. This trend is primarily because of low program activity, resulting from low demand for products, remoteness of the resource, and limited resources to complete needed actions.

Impacts from Recreation

The current recreation management would not affect the harvest of forest and woodland products. Developed recreation sites are not located in woodland harvest areas, and the majority of current recreation activity is of a dispersed nature, with little recreation occurring in woodland zones.

Impacts from Travel Management

Proposed decisions for OHV area and route designations could impact casual collection of forest and woodland products, by limiting off-road access. However, restrictions under Alternative N are the least of any alternative: 1,636,400 acres (77%) of the RFO would be open to motorized vehicles; motor vehicles would be limited to existing, designated, and maintained routes on 277,600 acres (13%) of the RFO; and 214,000 acres (10%) of the RFO would be closed to motorized vehicle use. The public would have access to 4,315 miles of unpaved routes in the RFO. Access for commercial activities, non-commercial permitted activities (firewood and Christmas tree cutting), and forest health projects is an administrative use that would be addressed in the permitting process.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Although some acres of the lands managed by the RFO and having forest and woodland resources would be open for leasing, the potential for impact is minimal because despite historical oil and gas exploration, no production in forested areas of the RFO has occurred. The same trend is expected to continue. If some production in woodland areas did take place, little impact would be expected because of the limited amount of disturbance that would occur. New roads built to wells could improve access to woodland areas for those harvesting woodland products.

Leasable Minerals—Coal

Development of a surface coal mine is unlikely during the life of the plan and therefore is not anticipated to affect forest and woodland products. Development of a subsurface coal mine is also unlikely during the life of the plan, and if developed would affect a much smaller surface area than a surface mine would.

Locatable Minerals

Little mining of locatable minerals is expected within the RFO during the next 15 to 20 years. Although it cannot be determined whether any potential mining would preclude harvest of forest and woodland products, the potential for impacts to forest and woodland products would be small. Most locatable minerals have historically been found in locations not conducive to woodland product harvest (e.g., high in the Henry Mountains).

Impacts from Special Designations

Wild and Scenic Rivers

Eligibility of WSRs would not impact harvesting of forest and woodland products because these resources are either not present or are very limited within the eligible WSR corridors.

Areas of Critical Environmental Concern

Management actions for protection of relevant and important values of ACECs may affect the availability of forest and woodland products harvest. Management prescriptions associated with ACEC designation that would affect visual resources include managing oil and gas leasing as closed to leasing or open to leasing subject to major constraints (NSO), more restrictive VRM designations, restricting livestock grazing, and travel limitations. Alternative N continues the designation of four ACECs (14,780 acres). Scenery was not one of the relevant and important values identified for these ACECs. However, allowing no uses that would cause irreparable damage to the relevant and important values in these areas would reduce surface-disturbing activities within those areas and protect visual resources. Such actions could include closing the areas to OHV use; managing the areas as closed to leasing or open to leasing subject to major constraints (NSO), depending on the ACEC; making the area unavailable for livestock grazing in three of the four ACECs; and acquiring inholdings.

Along with continuing the designations of Beaver Wash, North Caineville Mesa, and South Caineville Mesa ACECs, proposals under Alternative N would allow no uses that would cause irreparable damage to relevant and important values in those areas, would close the areas to OHV use, and would propose the areas for withdrawal from mineral entry. In addition to the above, Gilbert Badlands would be recommended to have no surface-disturbing activities allowed. However, because these areas are small in extent and do not have economically important forestry and woodland resources, there would be no effect on these resources.

Alternative A

Impacts from Air Quality

Impacts would be the same as those described under Alternative N.

Impacts from Soil Resources and Water Resources

Impacts would be the same as those described under Alternative N.

Impacts from Visual Resources

Under Alternative A, all acreage outside WSAs would be designated as VRM Classes III and IV (1,681,100 acres, or 79% of the RFO), allowing for moderate (Class III) or major (Class IV) changes to the landscape. This designation would allow slightly more flexibility than under Alternative N for forest and woodland products harvest and for management of forests and woodlands to meet the HFRA objectives. This increased flexibility would result from the increased land area available to implement management actions that would create visual changes on the landscape (e.g., cuttings, thinnings, and harrow treatments).

Impacts from Special Status Species

Impacts would be similar to those described under Alternative N, except that fewer areas would be restricted under Alternative A. For example, activities within Greater sage-grouse brooding/nesting habitat would be restricted from April 1 through June 15 under Alternative N, but no restrictions apply under Alternative A. Thus there would be increased opportunities for harvesting of forest and woodland products under Alternative A.

Impacts from Fish and Wildlife

Impacts would be the same as those described under Alternative N.

Impacts from Fire and Fuels Management

Using non-fire treatment methods to reduce hazardous fuels would increase the amount of biomass available. The use of prescribed fire and non-fire treatments would increase the opportunities for fuelwood and biomass harvest. Hazardous fuel reductions could alter the structure of forest and woodland areas by removing fire susceptible individuals and reducing stand density. Overall, these management actions could increase the economic value of forest products and reduce the risk of uncharacteristically large or intense wildfires in some areas. Alternative A would increase the availability of forest and woodland products, compared to Alternative N.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under Alternative A, resulting in no impacts to forestry and woodlands.

Impacts from Forestry and Woodland Products

Management actions implemented to support the objectives of the HFRA would increase the long-term health and productivity of forest and woodlands and indirectly increase resistance to insect pest infestations. Forestry management actions under Alternative A would provide for commercial and non-commercial timber and woodland product harvest when feasible, sustainable, and compatible with restoring, maintaining, and improving forest health. Availability of timber and woodland products would be increased, compared with Alternative N or C, and would allow for more flexibility towards meeting the objectives of the HFRA.

Impacts from Recreation

Proposed decisions regarding recreation management would not affect the harvest of forest and woodland products because proposed facilities that could preclude harvest would be expected to be minimal and to occur only when necessary to protect resources. SRMAs are proposed but do not include prescriptions to close the areas to harvest. If deemed in conflict with SRMA management, harvest restrictions would be addressed during completion of the individual SRMA activity plans.

Impacts from Travel Management

The type of impacts would be similar to those described under Alternative N, except that under Alternative A, less area (449,000 acres—21% of the RFO) would be open to motorized vehicles; motor vehicles would be limited to designated routes on 1,679,000 acres (79% of the RFO); and no areas would be closed to motorized vehicle use. The public would have access to 4,312 miles of unpaved routes in the RFO. Access would be restricted more under Alternative A than under Alternative N but would be less restricted than under Alternative C or D or the Proposed RMP.

Impacts from Minerals and Energy

Impacts would be the same as those described under Alternative N.

Impacts from Special Designations

Wild and Scenic Rivers

No river segments would be recommended as suitable WSRs under Alternative A.

Areas of Critical Environmental Concern

No ACECs would be proposed for designation under Alternative A.

Proposed RMP

Impacts from Air Quality

Impacts would be the same as those described under Alternative N.

Impacts from Soil Resources and Water Resources

Impacts would be the same as those described under Alternative N.

Impacts from Visual Resources

Under the Proposed RMP, 249,800 (12%) of the RFO would be designated as VRM Class II, meaning that only low levels of changes to the landscape could occur. Although designating these areas as VRM Class II could alter the size, type, and location of forest and woodland product harvest or forest health projects to meet the associated management objectives, forest and woodland products are not present on all of these acres. Sixty-seven percent of the RFO (1,431,300 acres) would be designated as VRM Classes III and IV, which allow for moderate (Class III) or major (Class IV) changes to the landscape and thus would allow more opportunities for forest and woodland product harvest. Slightly fewer acres would be designated as VRM Classes III and IV under the Proposed RMP than under Alternative N or A.

Impacts from Special Status Species

Impacts would be similar to those described under Alternative N, except that there are different restrictions between the two alternatives in regards to Greater sage-grouse. Under Alternative N surface disturbing activities within sage-grouse breeding and brooding-rearing habitats would be restricted from March 1 through July 15; under the Proposed RMP, these activities would be restricted within 2 miles of a lek from March 15 through July 15, and within sage-grouse winter habitat from December 15 through March 14. These restrictions could result in decreased opportunities for harvesting of forest and woodland products under the Proposed RMP, compared to Alternatives N and A. However because forested areas within sage-grouse habitat are generally limited, these restrictions are expected to have minimal impact on harvest of forest and woodland products. Also because 97 percent of sage-grouse winter habitat is within mule deer crucial habitat, which has a timing limitation on surface disturbing activities from December 15 through April 15, the sage-grouse winter timing limitation would only result in surface disturbing restrictions on an additional 2,200 acres.

Impacts from Fish and Wildlife

Impacts would be the same as those described under Alternative N.

Impacts from Fire and Fuels Management

Impacts would be the same as those described under Alternative A.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under the Proposed RMP, protecting the wilderness characteristics on 78,600 acres (4% of the RFO) would generally preclude the harvesting of forest and woodland products when they are present within these areas. Non-WSA lands with wilderness characteristics would be closed to woodland products harvesting, OHV and mechanized use would be limited to designated routes, and the areas would be designated as VRM Class II. These management actions would have beneficial and adverse impacts on woodland resources. Closing non-WSA areas with wilderness characteristics to woodland products harvesting and limiting OHV access would preserve the resource by beneficially reducing direct and indirect impacts caused by surface disturbances within these areas (e.g., soil compaction and erosion,

increased fire risks because of OHVs, increased potential of invasive species invasion, replacement of woodland resources). However, long-term, adverse impacts would be produced by the reduced opportunities for woodland harvesting for products use and by the restrictions on vegetation removal and treatments that could otherwise reduce understory fire risks and improve woodland ecological conditions.

Impacts from Forestry and Woodland Products

Impacts would be the same as those described under Alternative A.

Impacts from Recreation

Impacts would be the same as those described under Alternative A.

Impacts from Travel Management

The types of impacts would be similar to those described under Alternative N. However, under the Proposed RMP, substantially less area would be open to motorized vehicles (9,890 acres—less than 1% of the RFO); motor vehicles would be limited to existing, designated, and maintained routes on 1,908,210 acres (90% of the RFO); and 209,900 acres (10% of the RFO) would be closed to motorized vehicle use. The public would have access to 4,277 miles of unpaved routes in the RFO. Access would be more restricted under the Proposed RMP than under Alternative N or A but less restricted than under Alternative C or D.

Impacts from Minerals and Energy

Impacts would be the same as those described under Alternative N.

Impacts from Special Designations

Wild and Scenic Rivers

Impacts would be the same as those described under Alternative N.

Areas of Critical Environmental Concern

Under the Proposed RMP, two ACECs (2,530 acres) would be designated: North Caineville Mesa and Old Woman Front. Special management prescriptions for the North Caineville Mesa ACEC would include closing the area to OHV use; prescriptions for Old Woman Front would include prohibiting the harvesting of forest and woodland products and closing the area to OHV use. These prescriptions would affect the availability of these resources to the public, but because the total area involved would be so small, the overall effect to the program would be negligible.

Alternative C

Impacts from Air Quality

Impacts would be the same as those described under Alternative A.

Impacts from Soil Resources and Water Resources

Impacts would be the same as those described under Alternative N.

Impacts from Visual Resources

The types of impacts experienced under Alternative C would be similar to those described under Alternative A, except that the acreage designated as VRM Class II would increase to 230,600 (or 11% of the RFO), which is slightly more than under Alternative A. VRM Classes III and IV would be designated on 1,450,500 acres (68%) of the RFO, which would allow more opportunities for forest and woodland product harvest.

Impacts from Special Status Species

Impacts would be similar to those described under the Proposed RMP, however, there would be fewer restrictions on surface disturbing activities within Greater sage-grouse habitat. Because forested areas within sage-grouse habitat are generally limited, the restrictions that do exist under Alternative C are expected to have minimal impact on harvest of forest and woodland products.

Impacts from Fish and Wildlife

Impacts would be similar to those described under Alternative N, except that there are additional restrictions for protection of wildlife habitat areas under Alternative C. For example, OHV use on 142,000 acres of deer and elk crucial winter range and on 189,000 acres of crucial bison habitat would be closed under Alternative C. This management could limit opportunities for harvesting of forest and woodland products compared to Alternative N.

Impacts from Fire and Fuels Management

The management actions to limit fuels treatments and included under Alternative C (such as allowing only fire and biological treatment methods) would allow increased ladder fuels, stand density, and pinyon-juniper encroachment. Indirectly, this management could increase the amount of biomass available from pinyon-juniper woodlands. However, current demands for biomass are low, so this increase could make the forest and woodland areas more vulnerable to mortality from wildfire, insects, and disease. Overall, this increase could lead to increased fuel loading and the potential for uncharacteristically large or intense wildfires, which could reduce the availability of forest and woodland products in the long term.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under Alternative C, resulting in no impacts to forestry and woodlands.

Impacts from Forestry and Woodland Products

Management actions implemented to support the objectives of HFRA would increase the long-term health and productivity of forest and woodlands and indirectly increase resistance to insect pest infestations. Under Alternative C, effects to woodland areas would be the same as under Alternative A. However, prohibiting commercial timber harvest could limit the ability to treat timbered acres and might not effectively improve forest and woodland health.

Impacts from Recreation

Impacts would be the same as those described under Alternative A.

Impacts from Travel Management

Under Alternative C, no areas would be open to motorized vehicles. This proposed decision could impact casual collection and non-commercial harvest of forest and woodland products by limiting off-road access. Motor vehicles would be limited to designated routes on 1,445,000 acres (68% of the RFO); and 683,000 acres (32% of the RFO) would be closed to motorized vehicle use. The public would have access to 3,192 miles of unpaved routes. This alternative would result in greater access restrictions and more difficulty harvesting forest and woodland products than under Alternative N or A or the Proposed RMP. However, Alternative C would be less restrictive than Alternative D. Access for commercial activities and forest health projects is an administrative use that would be addressed during permitting or project development.

Impacts from Minerals and Energy

Impacts would be the same as those described under Alternative N.

Impacts from Special Designations

Wild and Scenic Rivers

Impacts would be the same as those described under Alternative N.

Areas of Critical Environmental Concern

Under Alternative C, 16 ACECs (886,810 acres) would be designated. Special management prescriptions for ACEC could include closing the area(s) to OHV use and prohibiting the harvesting of forest and woodland products (depending on the particular ACEC). These prescriptions would affect the availability of these resources to the public, but because the ACECs tend to be in remote areas away from population centers (where little forestry and woodland products harvesting occurs), the overall effect to the program would be minimal.

Alternative D

Impacts from Air Quality

Impacts would be the same as those described under Alternative N.

Impacts from Soil Resources and Water Resources

Impacts would be the same as those described under Alternative N.

Impacts from Visual Resources

The types of impacts experienced under Alternative D would be similar to those described under Alternative A, except that all non-WSA lands with wilderness characteristics (682,600 acres—32% of the RFO) would be designated as VRM Class I, precluding harvesting of forest and woodland products to meet the VRM management class objective of preserving the existing character of the landscape. Additionally, acres designated as VRM Classes III and IV would decrease to 931,700 acres. Together, this designation would limit the opportunities for forest and woodland product harvest, although the VRM Class I areas tend to be in remote areas away from population centers (where little forestry and woodland products harvesting occurs).

Impacts from Special Status Species

Impacts would be the same as those described under Alternative C.

Impacts from Fish and Wildlife

Impacts would be similar to those described under Alternative C, except Alternative D provides additional restrictions for protection of wildlife habitat areas. For example, OHV use on 258,000 acres of deer and elk crucial winter range and 207,000 acres of crucial bison habitat would be closed under Alternative D. This management could limit opportunities for harvesting of forest and woodland products more than under any other alternative.

Impacts from Fire and Fuels Management

Impacts would be the same as those described under Alternative C.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under Alternative D, protecting the wilderness characteristics on 682,600 acres (32% of the RFO) would generally preclude the harvesting of forest and woodland products when they are present within these

areas. Non-WSA lands with wilderness characteristics would be closed to woodland products harvesting, closed to OHVs, and designated as VRM Class I. These management actions would have beneficial and adverse impacts on woodland resources. Closing non-WSA areas with wilderness characteristics to woodland products harvesting and OHV access would preserve the resource by beneficially reducing direct and indirect impacts from surface disturbances within these areas (e.g., soil compaction and erosion, increased fire risks because of OHVs, an increased potential of invasive species invasion and replacement of woodland resources). Long-term, adverse impacts would be produced by the reduced opportunities for woodland harvesting for products use and by the restrictions on vegetation removal and treatments that could otherwise reduce understory fire risks and improve woodland ecological conditions.

Impacts from Forestry and Woodland Products

Impacts would be the same as those described under Alternative C.

Impacts from Recreation

Impacts would be the same as those described under Alternative A.

Impacts from Travel Management

Impacts would be similar to those under Alternative C, except that fewer acres would be limited to designated routes (972,800 acres), fewer miles of routes would be open to provide access to harvest areas (3,043 miles), and more acres would be closed to motorized vehicle use (1,155,200 acres) under Alternative D. Of all the alternatives, this alternative would result in the greatest access restrictions and the greatest potential for impacts to forestry and woodland resources.

Impacts from Minerals and Energy

Impacts would be the same as those described under Alternative N.

Impacts from Special Designations

Wild and Scenic Rivers

Impacts would be the same as those described under Alternative N.

Areas of Critical Environmental Concern

Impacts would be the same as those described under Alternative C

4.4.2 Livestock Grazing

This section describes potential impacts on livestock grazing resulting from the implementation of management actions for other resource programs. Impacts on resources and resource uses resulting from implementation of the livestock grazing program are discussed in those particular resource sections of this chapter. Impacts on livestock grazing activities are generally the result of activities that affect forage levels, land use restrictions that affect the ability to construct range improvements, and human disturbance or harassment of livestock within grazing allotments. Conducting vegetation treatments would likely have the greatest effect on livestock grazing, as such treatments could increase vegetation production and forage available for livestock. Activities that result in surface disturbance (e.g., mineral development, ROW construction, and recreation) or management of resources that results in limiting surface disturbance (e.g., fish and wildlife, vegetation, and visual resources) would also impact livestock grazing by affecting forage levels. Management of fire and fuels and forest and woodlands products harvesting would affect livestock grazing by either preserving or increasing available forage for livestock over the long term. Impacts to livestock grazing operations also result from interaction with visitors, access provisions, and other management factors that limit or restrict livestock grazing in certain areas.

Methods and Assumptions

This analysis was based on the following assumptions:

- Livestock grazing would occur throughout the majority of the RFO.
- Livestock grazing would be managed in accordance with the *Fundamentals of Rangeland Health* and *Standards and Guidelines for Grazing Administration,* and Utah's SRH and *Guidelines for Grazing Management.*
- The type and amount of grazing use would be expected to remain approximately the same.
- Range improvements would continue to occur at current rates to reach rangeland improvement goals.

Impact analyses and conclusions are based on interdisciplinary team knowledge of resources in the RFO, review of existing literature, and information provided by other agencies. Effects are quantified when possible. Spatial analyses were conducted by using GIS data and analyses. Impacts are described by using ranges of potential impacts or in qualitative terms, if appropriate.

Environmental Consequences

Impacts to livestock grazing would likely result from actions proposed under the following resource management programs:

- Soil Resources and Water Resources
- Vegetation and Fire and Fuels Management
- Cultural Resources
- Visual Resources
- Special Status Species
- Fish and Wildlife
- Wild Horses and Burros
- Non-WSA Lands with Wilderness Characteristics
- Livestock Grazing
- Recreation
- Travel Management

- Lands and Realty
- Minerals and Energy
- Special Designations.

Other programs were determined to have little or no impact on livestock grazing. There are no WSA decisions that would impact livestock grazing.

Alternative N: No Action

Impacts from Soil Resources and Water Resources

Implementing appropriate BMPs (Appendix 14) to minimize detrimental impacts that ground-disturbing activities could cause to soils and to maintain or enhance riparian areas (*Utah Riparian Management Policy,* 2005) through project design features or stipulations would help to reduce soil erosion, surface runoff, and sedimentation of streams. This reduction would help to maintain and enhance vegetation and water quality and increase channel stability, indirectly providing forage and water for livestock.

Impacts from Vegetation and Fire and Fuels Management

Management of vegetation resources would generally enhance vegetative conditions and indirectly affect livestock grazing, by increasing forage production. Applying the *Fundamentals of Rangeland Health* under the vegetation management program would help to manage surface uses and thereby enhance rangeland conditions and increase long-term forage production. However, managing rangelands according to the *Fundamentals of Rangeland Health* could also affect livestock operators on those allotments that do not meet standards for reasons attributed to grazing. Such adjustments could include season-of-use changes, forage allocation adjustments, implementation of grazing management practices (e.g., growing season deferment, riparian pastures, or exclosures), forage use limits, or conversions in kind or type of livestock. Management changes such as these could result in increased operating costs to the livestock operator. Over the long-term, achieving the standards would result in increased water availability and forage production, which would benefit livestock through improved animal distribution, increased weight gain and improved animal health.

Treatment of invasive species and noxious weeds would serve to control and contain weed species infestations, thereby maintaining forage production, diversity, and vigor. These actions could temporarily displace livestock and reduce available forage. BMPs for livestock grazing (such as requiring use of weed-free feed) would be implemented to discourage the introduction and spread of weeds.

Conducting vegetation treatments, particularly livestock rangeland treatments, would enhance vegetation conditions and indirectly affect livestock grazing, by increasing forage production. These treatments would have a short-term effect on livestock grazing by removing forage and by excluding livestock use for two growing seasons on treated areas, but enhanced rangeland conditions would be realized over the long-term. Conducting land treatments to reduce soil loss on identified areas and to improve watershed health and implementing erosion control measures in frail watershed areas would help to reduce soil erosion, surface runoff, and sedimentation of water sources and to reestablish grass/forb communities. This management would help to maintain and enhance vegetation conditions and water quality, which would indirectly provide forage and water for livestock.

Alternative N would allow for only limited treatment of vegetation, although a full range of tools (including mechanical, wildland or prescribed fire, and chemical methods) would be available. In the short term, these activities would decrease forage available for livestock use because treated areas are generally rested from livestock grazing for 2 years following the treatments. In the long-term, restoration activities would improve the watersheds and vegetation and provide additional forage for livestock. Areas in which vegetation treatments were not successful could be invaded by weed species or become

reestablished by other undesired vegetation communities, which would reduce available livestock forage over the long term.

In the short term, wildland fires could decrease forage available for livestock use and would require changes in and restrictions to livestock grazing use during emergency fire rehabilitation. (Livestock generally are not grazed in those areas until vegetation is reestablished—generally 2 years.) In the long term, forage quality and quantity available to livestock could potentially increase. Wildland fires could also damage range improvements such as fences, corrals, enclosures, monitoring studies, and above-ground pipelines.

Impacts from Cultural Resources

Activities associated with the management of cultural resources would affect relatively small, localized areas and would not have measurable effects on livestock forage. Mitigating adverse impacts to cultural resources and allowing for preservation and interpretation of such resources could include excavation of known sites, resulting in soil disturbances and forage removal. Restrictions on surface-disturbing activities near cultural sites could prevent the removal of forage in these areas, although it could also result in the modification or relocation of range improvements.

Impacts from Visual Resources

New range improvements, such as structures or vegetation treatments, would be required to meet VRM class objectives. VRM Classes I and II would be aimed at greater retention of existing landscape character than would Classes III or IV. The class designation could affect range-improvement design (functionality and cost) or prohibit the construction of improvements such as pipelines and water storage tanks necessary to properly manage or improve livestock grazing management practices. Under Alternative N, none of the lands managed by the RFO would be classified as VRM Class I; 529,000 acres (25%) would be managed as VRM Class II; 569,000 acres (27%) would be managed as VRM Class III; and 1,029,500 acres (48%) would be managed as VRM Class IV. Areas managed as VRM Class III or IV (75% of the RFO under this alternative) would be subject to actions that allow for greater landscape modification, thus having minimal effects on range improvements.

Impacts from Special Status Species and Fish and Wildlife

Management actions to enhance wildlife habitat could affect livestock grazing by improving vegetation conditions and indirectly maintaining or increasing forage production. However, implementing decisions to increase populations of SSS, implementing conservation measures for listed and sensitive species, and prohibiting or restricting ground-disturbing activities within buffer zones (identified in Appendices 10 and 14) for SSS could also restrict opportunities for range improvements and other grazing management actions.

Management and restoration of native wildlife populations into their historic ranges could have negligible to minor short- and long-term impacts on livestock operations by creating conflict with space, forage use, and water. However, the two activities have mutual goals. Water developments designed to provide new water sources for wildlife would in some situations increase water availability for livestock, promoting improved distribution of both livestock and wildlife.

Reintroductions, transplants, augmentation, and reestablishment of certain wildlife species (e.g., introducing bighorn sheep in domestic sheep range) could eliminate use of livestock in those areas. In addition, complying with the *Desert Bighorn Sheep Management Plan* would preclude converting cattle permits to sheep permits in bighorn sheep habitat (which is located in the eastern portion of the RFO). However, this would have no effect on total acres available for livestock grazing.

Impacts from Wild Horses and Burros

Under Alternative N, 100 AUMs are allocated to burros in the Canyonlands HMA, although no AML is established. These relatively small numbers would pose minimal conflicts with livestock grazing.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under Alternative N, resulting in no impacts to livestock grazing.

Impacts from Livestock Grazing

Under Alternative N, 138,952 acres would continue to be unavailable to livestock grazing, whereas 1,989,048 acres would continue to be available to grazing. No changes to current grazing management would be proposed. Continued adherence to the *Fundamentals of Rangeland Health* and *Standards and Guidelines for Grazing Administration* would result in maintaining plant vigor and increasing litter accumulation, resulting in the maintenance or improvement of organic matter content, soil structure, permeability, productivity, and riparian-wetland function. All of these impacts would provide beneficial impacts to forage production for livestock.

Impacts from Recreation

Recreation activities would continue to directly impact livestock grazing operations through human disturbance, including animal displacement, livestock respiratory problems caused by airborne dust, animal displacement and harassment, and the injury or death of animals caused by vehicle collisions. Cross-country recreational OHV use could damage and remove forage resources and increase dust levels in high-use areas, thereby causing dust to coat forage and subsequently lowering forage palatability. Vandalism to range projects and leaving gates open would also have an impact on livestock grazing operations. These impacts would likely increase over the life of the plan because of the increasing level of visitation in the RFO.

Overall impacts from recreation on livestock grazing would be moderate under Alternative N and would be less intense compared to the other alternatives, which would expand recreational opportunities and place restrictions on types of uses (including motorized access).

Impacts from Travel Management

Generally, the more area that is open to OHV use, the greater the potential for trampling of vegetation, which would reduce the amount of forage available for livestock. Limiting travel to designated routes confines the impacts to areas already disturbed or hardened for vehicle use. Under Alternative N, 1,636,400 acres (77%) of the RFO would be open to motorized vehicles, allowing potential impacts to vegetation over a large portion of the RFO; motor vehicles would be limited to existing, designated, and maintained routes on 277,600 acres (13%) of the RFO; and 214,000 acres (10%) of the RFO would be closed to motorized vehicle use.

Under Alternative N, the most miles of roads would remain open and the least amount would be closed. This alternative would facilitate livestock management by allowing continued access to livestock grazing operations. However, it is expected that visitation to the RFO would continue to grow during the life of this plan. Easy access afforded by the most miles of open roads would allow for increased interaction of the public with livestock and livestock developments (e.g., fences, corrals, and water developments). This would increase the occurrences of livestock harassment, gates being inappropriately left open or closed, and range improvements being damaged.

Providing the greatest miles of roads under Alternative N would also facilitate dispersed visitor use. This use, in turn, would diffuse impacts to livestock and related facilities instead of concentrating such impacts

on particular allotments or areas. Overall, Alternative N would cause the fewest impacts to livestock grazing operations from travel management decisions, compared to the other alternatives.

Impacts from Lands and Realty

Land tenure adjustments (land disposals and acquisitions) would be processed based on specific requests; the demand for these actions is unknown at this time. The loss of public land through land disposals (e.g., Section 203 land sales, exchanges, R&PP patents) could reduce the forage available for livestock use on some allotments. Under Alternative N, 280 acres would be identified for sale. At 8 acres per AUM, this could result in the loss of approximately 35 AUMs, which is less than 1% of the total AUMs available within the RFO. Acquired lands within a grazing allotment would be added to the allotment, but these lands would likely also involve only a small amount of AUMs. Retaining lands in federal ownership (e.g., habitat for listed and candidate species, eligible WSR segments, ACECs) would continue to provide rangelands for livestock in these areas (except where identified as unavailable for grazing).

Construction activities related to the development of land use authorizations (e.g., ROWs, permits, leases, easements) would remove a small amount of vegetation over the short term and would increase the potential for the introduction and proliferation of noxious weeds and invasive species, thereby causing a loss of livestock forage and associated AUMs. Increased vehicle travel on new roads would also increase the potential for the spread of weeds and harassment of and injury to livestock. However, an increase in improved roads could facilitate livestock management operations by increasing access to remote locations within allotments. Under Alternative N, all ACECs (14,780 acres), eligible WSR corridors (12 segments—135 miles), areas closed to leasing from oil and gas (459,700 acres), and areas open to leasing subject to major constraints (NSO) (22,600 acres) would be managed as ROW avoidance areas where none of the aforementioned impacts would occur. Exceptions would be granted only when the proposed authorization would not create substantial surface disturbance or would create only temporary impacts.

Impacts from Minerals and Energy

Surface-disturbing activities associated with the development of leasable, locatable, and salable minerals could disturb soils, remove vegetation, and increase the potential for the introduction and proliferation of noxious weeds, thereby causing a loss of livestock forage and associated AUMs. As specified in Appendix 12, surface disturbance caused by geophysical exploration activities would amount to 5,100 acres (much of it on private lands) and oil and gas development (roads, pipelines, and drill pads) would disturb an estimated 3,080 acres, resulting in a loss of livestock forage in these areas. At 20 acres per AUM, available forage could be reduced by 154 AUMs. However, about 80% of the initial disturbance would be reclaimed within the planning horizon, so only 20% of the disturbed area would be devoid of vegetation for the life of the well. Given that livestock grazing occurs across most of the RFO, the loss of forage in these areas would result in relatively minor impacts to livestock grazing.

Mineral development activities would also increase the potential for livestock harassment and livestock loss from vehicle collisions. However, the improvement of roads associated with mineral development could facilitate livestock management operations by improving access to remote locations within allotments.

Impacts from Special Designations

Wild and Scenic Rivers

Management of river segments to protect their outstandingly remarkable values, free-flowing nature, and tentative classification would include surface use restrictions. Such restrictions would preclude surface disturbance and related forage removal and could help to maintain AUMs for livestock. Under Alternative N, all 12 eligible river segments (135 miles) would receive protection. However, these additional land use restrictions could also increase constraints on options for range improvements. The restrictions on

constructing range improvements within eligible WSR corridors could reduce management options to correct deficiencies in areas that are not meeting RHS, or in meeting other resource objectives. This reduction could lead to reductions in grazing use or changes in season of use.

Areas of Critical Environmental Concern

Alternative N continues the designation of four ACECs (14,780 acres). Two of these ACECs (North Caineville Mesa and South Caineville Mesa) are unavailable for livestock grazing. The feasibility of grazing these areas is questionable, given their difficult access and lack of water. Management of the other two ACECs would have little or no impact on livestock grazing because livestock grazing was not identified as a threat to any relevant or important values, so no special management prescriptions that affect grazing operations would be implemented.

Alternative A

Impacts from Soil Resources and Water Resources

Impacts would be the same as those described under Alternative N.

Impacts from Vegetation and Fire and Fuels Management

The types of impacts experienced as a result of vegetation and fire and fuels management would be similar to those described under Alternative N. However, under Alternative A, maximum treatment acreage limits would be set (averaging 73,600 acres annually for all treatments). Although no maximum treatment acreage limits would be set under Alternative N, it is likely that fewer acres would actually be treated under that alternative because it generally mandates full suppression of wildland fires and allows only for limited treatment of vegetation. Additionally, full suppression of wildland fires is not mandated under Alternative A. Increasing the acres of vegetation treated would increase the short-term displacement of livestock following the treatments. Over the long term, increasing treatments would increase and improve vegetation types that are valuable for livestock grazing. However, as there is no requirement to treat a set acreage, there could be no short-term decreases in forage. If little or no vegetation treatments were implemented, the existing active-use AUMs would likely decrease as pinyon-juniper woodlands continued to expand, invading sagebrush steppe vegetation types and reducing understory forage species.

Impacts from Cultural Resources

Impacts would be similar to those described under Alternative N, except that under Alternative A most cultural resource sites would be allocated and managed for public use. This allocation would emphasize public education and interpretation of cultural resources, increasing visitation to sites and possibly causing increased conflicts between livestock and people. This conflict would affect only relatively small, localized areas and would not have significant impacts on livestock.

Impacts from Visual Resources

The types of impacts experienced as a result of VRM would be similar to those described under Alternative N, except that more areas would be designated as VRM Classes III and IV (1,681,100 acres, or 79% of the RFO) under Alternative A. Designating more areas in these VRM classes would result in larger areas of moderate-to-major modifications in the existing character of the landscape, thereby reducing impacts on design, construction, and installation of range improvements, compared to Alternative N.

Impacts from Special Status Species and Fish and Wildlife

The types of impacts experienced as a result of SSS management would be similar to those described under Alternative N. However, Alternative A would include additional strategies to avoid or reduce

fragmenting habitat. (Strategies could include employing directional drilling for oil and gas, closing and reclaiming roads, and mitigating the effects of proposed projects that could cause long-term or permanent impacts or losses of habitat.) All these actions would maintain forage cover and reduce forage loss, thus maintaining AUMs for livestock. Alternative A also would include less restrictions on OHV use in crucial wildlife habitats, possibly removing forage resources and increasing dust levels (which could affect palatability of forage) in high-use areas. Alternative A also has less restrictions on surface disturbing activities (e.g., implementation of range improvement projects) within Greater sage-grouse brooding/nesting habitat compared to Alternative N.

Impacts from Wild Horses and Burros

In general, the greater the number of burros, the greater the possibility of adverse impacts on soil resources. Under Alternative A, no AUMs would be allocated to burros in the Canyonlands HMA, and the AML would be set at zero. Keeping the AML at zero would eliminate impacts to soils caused by trampling, compaction, and reduced vegetation cover.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs would be proposed under Alternative A, resulting in no impacts to livestock grazing.

Impacts from Livestock Grazing

The types of impacts experienced as a result of livestock grazing management would be similar to those described under Alternative N, except that an additional 36,950 acres would be available for grazing under Alternative A. This acreage represents only a 3% increase over Alternative N. Although this increase in total available acres is minimal, it could represent lands that would be important to individual livestock operations. Therefore, impacts would be minor areawide but could be moderate in specific areas.

Impacts from Recreation

Under Alternative A, five SRMAs (514,500 acres) would be established to manage recreational use and to mitigate impacts caused by this use, such as uncontrolled camping, parking, and other activities. Management of the Factory Butte SRMA (199,700 acres), Big Rocks SRMA (9,300 acres), and Sahara Sands SRMA (12,300 acres) for motorized use would emphasize this type of recreational opportunity available in the RFO and consequently would increase the potential for livestock displacement, harassment, or injury. However, implementing surface use restrictions within the SRMAs would help to reduce the degree of impact from recreational and other uses. Encouraging primitive types of recreation and prohibiting surface disturbance from oil and gas development and cross-country OHV use in the Dirty Devil and Otter Creek SRMAs would help to reduce effects related to recreational use.

Impacts from Travel Management

The types of impacts experienced as a result of travel management would be similar to those described under Alternative N. However, Alternative A would designate 449,000 acres (21% of the RFO) as open to motorized vehicles; motor vehicles would be limited to designated routes on 1,679,000 acres (79%) of the RFO; and 0 acres would be closed to motorized vehicle use. The amount of open areas, although greatly reduced as compared to Alternative N, could still result in livestock displacement, harassment, or injury caused by vehicle use in those areas.

Under Alternative A, there would be 4,312 miles of designated routes (slightly more than under Alternative N) and 68 miles of closed routes (only 3 miles less than under Alternative N). This management would facilitate livestock management by allowing essentially unchanged access to livestock grazing operations. As stated previously, it is expected that visitation to the RFO would

continue to grow during the life of this plan. Thus, easy access to the public lands would allow for increased interaction of the public with livestock and livestock developments (e.g., fences, corrals, water developments). This interaction would increase the occurrences of livestock being harassed, gates being inappropriately left open or closed, and range improvements being damaged.

Impacts from Lands and Realty

The types of impacts experienced as a result of lands and realty would be similar to those described under Alternative N, except that Alternative A proposes more acres (13,400 acres) for disposal through FLPMA land sales. At 20 acres per AUM, this increase could result in the loss of approximately 670 AUMs (1% of the total AUMs available within the RFO), which would result in an insignificant impact to livestock grazing. In addition, Alternative A proposes fewer ROW avoidance and exclusion areas (459,700 acres) within which no construction activities related to the development of land use authorizations (e.g., ROWs, permits, leases, easements) would occur. Vegetation would be retained and the potential for the introduction and proliferation of noxious weeds and invasive species (which could cause a loss of livestock forage and associated AUMs) would be minimized in these areas. Within these areas, there would be no new roads that could increase vehicle travel and the potential for harassment of and injury to livestock.

Impacts from Minerals and Energy

Impacts would be the same as those described under Alternative N.

Impacts from Special Designations

Wild and Scenic Rivers

There would be no impacts to livestock grazing from WSRs because no eligible river segments would be determined suitable. Thus, no segments would be managed to protect outstandingly remarkable values, free-flowing nature, and tentative classification under Alternative A.

Areas of Critical Environmental Concern

Under Alternative A, no areas would be designated as ACECs. Thus, no actions that specifically protect relevant and important values but that could restrict management of grazing would occur, resulting in no impact to livestock grazing.

Proposed RMP

Impacts from Soil Resources and Water Resources

Impacts would be the same as those described under Alternative N.

Impacts from Vegetation and Fire and Fuels Management

Impacts would be the same as those described under Alternative A.

Impacts from Cultural Resources

Impacts would be similar to those described under Alternative A, except that fewer cultural resource sites would be allocated and managed for public use, thereby decreasing visitation to sites and possibly decreasing conflicts between livestock and people, compared to Alternative A.

Impacts from Visual Resources

The types of impacts experienced as a result of VRM decisions would be similar to those described under Alternative N. Under the Proposed RMP, 446,900 acres (21% of the lands managed by the RFO) would be designated as VRM Class I; 249,800 acres (12%) would be managed as VRM Class II; 393,100 acres

(18%) would be designated as VRM Class III; and 1,038,200 acres (49%) would be designated as VRM Class IV. Although the majority of the RFO would be designated as VRM Class III or IV (potentially resulting in large areas of moderate-to-major modifications in the existing character of the landscape, with accompanying minimal impacts on range improvements), less of the RFO would be designated in these VRM classes than under Alternative N or A.

Impacts from Special Status Species and Fish and Wildlife

Impacts from SSS management actions would be the same as those described under Alternative A. However, the Proposed RMP has more restrictions on surface disturbing activities within Greater sage-grouse habitat. For example, Alternative A has no stipulation on surface disturbing activities within sage-grouse brooding/nesting habitat, while the Proposed RMP prohibits surface disturbing or otherwise disruptive activities within 2 miles of a lek from March 15 through July 15 and in sage-grouse winter habitat from December 15 through March 14. Limitations on surface disturbing activities within Greater sage-grouse habitat are greater under the Proposed RMP than under any of the other alternatives.

Impacts from fish and wildlife management actions under the Proposed RMP would be similar to those described under Alternative A. However, the Proposed RMP also proposes temporal (winter and/or spring, depending on species) restrictions on surface-disturbing activities (to protect wildlife during critical life stages) and restricts OHV use in deer and elk crucial habitats. These management actions could restrict opportunities for constructing or maintaining range improvements and other grazing management actions.

Impacts from Wild Horses and Burros

Under the Proposed RMP, 600 AUMs would be allocated to burros in the Canyonlands HMA, to meet an AML upper limit of 100. These numbers are greater than under Alternative N or A but less than under Alternative C or D (which establish a herd size of between 120 and 200 head). Because more burros result in a greater possibility of competition for forage between burros and livestock, the Proposed RMP could impact grazing management more than would Alternative N or A but less than would Alternative C or D.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under the Proposed RMP, 78,600 acres in 12 non-WSA areas with wilderness characteristics would be protected from impacts that could degrade their wilderness values. Management decisions to protect these values would include prohibiting range projects that would not meet VRM Class II objectives and limiting OHV use to designated routes. These decisions could increase constraints on options for range improvements and decrease opportunities for access to remote locations within allotments. These decisions would make management of grazing operations more difficult.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

Impacts would be similar to those described under Alternative A, except that more lands (860,390 acres) would be established as SRMAs to manage recreational use and to mitigate impacts caused by this use. Under the Proposed RMP, less area would be managed for motorized use; management of the Factory Butte SRMA (24,400 acres) and Big Rocks SRMA (90 acres) for motorized use would emphasize this type of recreational opportunity available in the RFO and consequently would increase the potential for livestock displacement, harassment, or injury. However, implementing surface use restrictions within all or portions of the SRMAs would help to reduce the degree of impact from recreational and other uses. Encouraging primitive types of recreation and prohibiting surface disturbance from oil and gas

development and cross-country OHV use in the Henry Mountains, Dirty Devil, and Capitol Reef Gateway SRMAs would help to reduce effects related to recreational use.

Impacts from Travel Management

The types of impacts experienced as a result of travel management would be similar to those described under Alternative N. However, the Proposed RMP designates only 9,890 acres (less than 1% of the RFO) as open to motorized vehicles; motor vehicles would be limited to designated routes on 1,908,210 acres (90%) of the RFO; and 209,900 acres (10%) would be closed to motorized vehicle use. The amount of open areas, although greatly reduced as compared to Alternative N, would still result in the potential for livestock displacement, harassment, or injury caused by vehicle use in those areas. However, increased restrictions on OHV use would decrease forage loss and decrease dust levels (which could affect palatability of forage) in high-use areas.

Under the Proposed RMP, there would be 4,277 miles of designated routes (3% less than under Alternative N), with 345 miles of routes closed. Therefore, the Proposed RMP could affect livestock management by restricting access to livestock grazing operations substantially more than would Alternative N.

Impacts from Lands and Realty

Impacts from land tenure adjustments (acquisitions and disposals) would be the same as those described under Alternative A.

The types of impacts from land use authorizations would be similar to those described under Alternative N. However, the Proposed RMP proposes more ROW avoidance and exclusion areas (601,800 acres closed to leasing or open to leasing subject to major constraints (NSO), one suitable WSR segment—5 miles, and two ACECs—2,530 acres). Within these ROW avoidance and exclusion areas, no construction activities related to the development of land use authorizations (e.g., ROWs, permits, leases, easements) would remove vegetation or increase the potential for the introduction and proliferation of noxious weeds and invasive species, (which otherwise could cause a loss of livestock forage and associated AUMs). Within these ROW avoidance and exclusion areas there would also be no increased vehicle travel on new roads (which otherwise could increase the potential for harassment of and injury to livestock).

Impacts from Minerals and Energy

Impacts would be the same as those described under Alternative N.

Impacts from Special Designations

Wild and Scenic Rivers

Impacts from managing WSRs would decrease under the Proposed RMP as compared to Alternative N and increase as compared to Alternative A because only one eligible segments (5 miles) would be recommended as suitable and managed (with surface use restrictions) to protect outstandingly remarkable values, free-flowing nature, and tentative classification. These surface use restrictions would preclude surface disturbance and related forage removal and could help to maintain AUMs for livestock. However, these additional land use restrictions could also increase constraints on options for range improvements.

Areas of Critical Environmental Concern

The Proposed RMP would designates two ACECs (2,530 acres). Both of these ACECs would be unavailable for livestock grazing. The feasibility of grazing the North Caineville Mesa ACEC is questionable, given its difficult access and lack of water. The Old Woman Front ACEC encompasses only

330 acres; its small size would not result in the loss of a significant amount of AUMs, so the overall RFO grazing program would not be affected substantially.

Alternative C

Impacts from Soil Resources and Water Resources

Impacts would be the same as those described under Alternative N.

Impacts from Vegetation and Fire and Fuels Management

The types of impacts experienced as a result of vegetation and fire and fuels management would be similar to those described under Alternative A, although fewer acres would be treated annually under Alternative C (averaging 26,000 annually for all treatments). In addition, Alternative C proposes using only treatment methods that mimic natural processes (e.g., fire, biological, hand cutting), which would likely not be as effective as conventional vegetation treatments and could result in a slower process of vegetation enhancement and related forage increases. Although vegetation conditions described under Alternative A could be reached over the long term, the rate of recovery following individual treatments would likely be reduced under Alternative C. This reduction would increase the time that livestock would be precluded following treatments.

Impacts from Cultural Resources

Impacts would be similar to those described under the Proposed RMP, except that fewer cultural resource sites would be allocated and managed for public use, thereby decreasing visitation to sites and potentially decreasing conflicts between livestock and people, compared to the Proposed RMP.

Impacts from Visual Resources

The types of impacts experienced as a result of VRM decisions would be similar to those described under Alternative N. Under Alternative C, 446,900 acres (21% of the lands managed by the RFO) would be designated as VRM Class I; 230,600 acres (11%) would be managed as VRM Class II; 509,100 acres (24%) would be designated as VRM Class III; and 941,400 acres (44%) would be designated as VRM Class IV. Although the majority of the RFO would be designated as VRM Class III or IV (which could result in large areas of moderate-to-major modifications in the existing character of the landscape, with accompanying minimal impacts on range improvements), less of the RFO would be designated in these VRM classes under Alternative C than under Alternative N or A or the Proposed RMP.

Impacts from Special Status Species and Fish and Wildlife

The types of impacts experienced as a result of SSS management would be similar to those described under the Proposed RMP. However, limitations on surface disturbing activities within Greater sage-grouse habitat are less under Alternative C than under the Proposed RMP.

The types of impacts experienced as a result of fish and wildlife management would be similar to those described under Alternative A. However, Alternative C would propose restricting surface disturbance or surface occupancy within 660 feet of riparian areas (compared with 330 feet under Alternative A), includes more restrictions on OHV use in crucial wildlife habitats, and designates an ACEC in the Henry Mountains (288,200 acres) for the protection of wildlife values. These additional land use restrictions would further help to improve vegetation conditions and increase forage production but could also increase constraints on options for range improvements.

Impacts from Wild Horses and Burros

Under Alternative C, 1,200 AUMs would be allocated to burros in the Canyonlands HMA to meet an AML upper limit of 200. These numbers are greater than under Alternative N or A or the Proposed RMP.

Because more burros result in a greater possibility of competition for forage between burros and livestock, Alternative C could impact grazing management more than would Alternative N or A or the Proposed RMP.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs would be proposed under Alternative C, resulting in no impacts to livestock grazing.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

Impacts would be similar to those described under the Proposed RMP, except that under Alternative C, more lands (930,000 acres) would be established as SRMAs to manage recreational use and to mitigate impacts caused by this use, and no areas would be managed for motorized use. This management would decrease the potential for livestock displacement, harassment, or injury. Encouraging primitive types of recreation and prohibiting surface disturbance from oil and gas development and cross-country OHV use in all of the SRMAs would help to reduce effects related to recreational use.

Impacts from Travel Management

The types of impacts experienced as a result of travel management would be similar to those described under Alternative N. However, Alternative C designates no acres as open to motorized vehicles; motor vehicles would be limited to designated routes on 1,445,000 acres (68%) of the RFO; and 683,000 acres (32%) would be closed to motorized vehicle use. This alternative would therefore limit the potential for livestock displacement, harassment, or injury caused by vehicle use to those areas designated as limited. Increased restrictions on OHV use would also decrease forage loss and decrease dust levels (which could affect palatability of forage) in high-use areas.

Under Alternative C, there would be 3,192 miles of designated routes (26% less than under Alternative N), with 1,188 miles of routes closed (18 times the amount closed under Alternative N). This management could affect livestock management by restricting access to livestock grazing operations substantially more than would Alternative N.

Impacts from Lands and Realty

Under Alternative C, no lands would be identified as available for FLPMA land sales. Thus, no AUMs would be lost because of this type of lands action.

The types of impacts caused by land use authorizations would be similar to those described under Alternative N. However, Alternative C proposes more ROW avoidance and exclusion areas (735,000 acres closed to leasing or open to leasing subject to major constraints [NSO], 12 suitable WSR segments—135 miles, and 16 ACECs). Within these ROW avoidance and exclusion areas, no construction activities related to the development of land use authorizations (e.g., ROWs, permits, leases, easements) would occur. Thus, vegetation would be retained in these areas and the potential for the introduction and proliferation of noxious weeds and invasive species (which could cause a loss of livestock forage and associated AUMs) would be minimized. Within these ROW avoidance and exclusion areas, there would also be no new roads that could increase vehicle travel and the potential for harassment of or injury to livestock.

Impacts from Minerals and Energy

Impacts would be the same as those described under Alternative N.

Impacts from Special Designations

Wild and Scenic Rivers

Management of river segments to protect their outstandingly remarkable values, free-flowing nature, and tentative classification would include surface use restrictions. Such restrictions would preclude surface disturbance and related forage removal and could help to maintain AUMs for livestock. Under Alternative C, all 12 eligible river segments (135 miles) would be recommended as suitable and would be managed (with surface use restrictions) to protect their outstandingly remarkable values, free-flowing nature, and tentative classification. These surface use restrictions would preclude surface disturbance and related forage removal and could help to maintain AUMs for livestock. However, these additional land use restrictions could also increase constraints on options for range improvements.

Areas of Critical Environmental Concern

Alternative C designates 16 ACECs (886,810 acres). Portions of the Badlands ACEC (North and South Caineville Mesas) are already unavailable for livestock grazing in the current LUP; the feasibility of grazing these areas is questionable given their difficult access and lack of water. Old Woman Front ACEC encompasses such a small area (330 acres) that prohibiting grazing would not result in the loss of a significant amount of AUMs, so the overall RFO grazing program would not be substantially affected. Of the remaining ACECs, three (Dirty Devil, Henry Mountains, and Little Rockies) preclude converting cattle permits to sheep permits. However, this preclusion would have no effect on total acres or AUMs available for livestock grazing because cattle could still be grazed.

Allowing no uses that would cause irreparable damage to the relevant and important values in the ACECs would preclude surface disturbance and related forage removal and could help to maintain AUMs for livestock. Such decisions could include closing the areas to OHV use; managing the areas as either closed to leasing or open to leasing subject to major constraints (NSO), depending on the ACEC; and designating the areas as VRM Class II. However, these additional land use restrictions could also increase constraints on options for range improvements and access to allotments for management purposes.

Alternative D

Impacts from Soil Resources and Water Resources

Impacts would be the same as those described under Alternative N.

Impacts from Vegetation and Fire and Fuels Management

Impacts would be the same as those described under Alternative C.

Impacts from Cultural Resources

Impacts would be the same as those described under Alternative C.

Impacts from Visual Resources

The types of impacts experienced as a result of VRM decisions would be similar to those described under Alternative N. Under Alternative D, 1,129,600 acres (53% of the lands managed by the RFO) would be designated as VRM Class I; 66,700 acres (3%) would be designated as VRM Class II; 355,100 acres (17%) would be designated as VRM Class III; and 576,600 acres (27%) would be designated as VRM Class IV. With the majority of the RFO designated as VRM Classes I and II (where the existing character of the landscape must be preserved or maintained), the ability to implement range improvements would be precluded or constrained, thus potentially affecting the ability to treat vegetation (and improve forage condition) or to construct improvements for distribution of livestock.

Impacts from Special Status Species and Fish and Wildlife

Impacts would be similar to those described under Alternative C, except that there would be additional restrictions on motorized use in deer, elk, and bison habitat under Alternative D. These restrictions would increase constraints on access to allotments for management purposes.

Impacts from Wild Horses and Burros

Impacts would be the same as those described under Alternative C.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under Alternative D, non-WSA areas with wilderness characteristics would be protected from impacts that could degrade their wilderness values. Management decisions to protect these values would include prohibitions on range projects that would not meet VRM Class I objectives (including construction of new fences, water structures, and other facilities that may be needed for proper livestock distribution) and closing the areas to OHV use. These prohibitions could increase constraints on options for range improvements and decrease opportunities for access to remote locations within allotments. These decisions would make management of grazing operations more difficult.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

Impacts would be similar to those described under Alternative C, except that Alternative D would establish more lands (1,358,100 acres) as SRMAs to manage recreational use and to mitigate impacts caused by this use; none of these areas would be managed for motorized use. This management would decrease the potential for livestock displacement, harassment, or injury. Encouraging primitive types of recreation and prohibiting surface disturbance from oil and gas development and cross-country OHV use in all of the SRMAs would help to reduce effects related to recreational use.

Impacts from Travel Management

The types of impacts experienced as a result of travel management would be similar to those described under Alternative C. However, Alternative D designates 972,800 acres (46% of the RFO) as limited to designated routes and 1,155,200 acres (54%) as closed to motorized vehicle use. More than any other alternative, Alternative D would limit the potential for livestock displacement, harassment, or injury from vehicle use. Increased restrictions on OHV use would also decrease forage loss and dust levels (which could affect palatability of forage) in high-use areas.

Under Alternative D, there would be 3,043 miles of designated routes (the least of any alternative), with 1,242 miles of routes closed (the most of any alternative). This management could affect livestock management by restricting access to livestock grazing operations substantially more than any other alternative would.

Impacts from Lands and Realty

Impacts from land tenure adjustments would be the same as those described under Alternative C.

The types of impacts from land use authorizations would be similar to those described under Alternative N. However, Alternative D proposes more ROW avoidance and exclusion areas (1,203,800 acres closed to leasing or open to leasing subject to major constraints [NSO], non-WSA lands with wilderness characteristics, 12 suitable WSR segments, and 16 ACECs). Within these ROW avoidance and exclusion areas, no surface-disturbing activities related to the development of land use authorizations (e.g., ROWs,

permits, leases, easements) would occur. Thus, vegetation would be retained in these areas and the potential for the introduction and proliferation of noxious weeds and invasive species would be minimized, causing no loss of livestock forage and associated AUMs. Within these ROW avoidance and exclusion areas, there would also be no new roads that could increase the potential for harassment of and injury to livestock from motorized vehicles.

Impacts from Minerals and Energy

Impacts would be the same as those described under Alternative C.

Impacts from Special Designations

Wild and Scenic Rivers

Impacts would be the same as those described under Alternative C.

Areas of Critical Environmental Concern

Impacts would be similar to those described under Alternative C; the same ACECs are designated in both alternatives. However, management prescriptions of some ACECs would be more restrictive under Alternative D. For example, under Alternative D, all non-WSA lands with wilderness characteristics within the ACECs would be designated as closed to OHV use and would be designated as VRM Class I. This designation could increase constraints on options for range improvements as well as decrease opportunities for access to remote locations within allotments, compared with Alternative C.

4.4.3 Recreation

This section presents potential impacts on recreation resources, opportunities, and experiences from management actions for other resource programs. Recreation uses within the decision area include backpacking, recreational OHV use, hiking, camping, sightseeing/viewing nature, hunting, fishing, mountain biking, rock climbing, and horseback riding. Impacts could occur through potential changes to visitor preferences (activities, experiences, benefits), recreation setting conditions (physical, social, administrative), recreation management (resources, signing, facilities), recreation marketing (visitor services, information, interpretation and environmental education), recreation inventory and monitoring, and recreation administration (permits, fees, visitor limits and regulations). These recreation features are interrelated and connected to access. For example, changes in recreation settings would result in corresponding changes in the opportunities to achieve desired recreation experiences and associated benefits. These opportunities and benefits are influenced by access.

Recreational experiences and the potential attainment of a variety of beneficial outcomes are vulnerable to any management action that would alter the settings and opportunities in a particular area. Recreation settings are based on a variety of attributes, such as remoteness, the amount of human modification in the natural environment, evidence of other users, restrictions and controls, and the level of motorized vehicle use. Management actions that greatly alter such features within a particular portion of the planning area could affect the capacity of that landscape to support appropriate recreation opportunities and beneficial outcomes.

Methods and Assumptions

The analysis is based on the following assumptions:

- Recreation use within the planning area will continue to increase during the life of the plan.
- The incidence of resource damage and conflicts between recreationists involved in motorized and non-motorized activities will increase with increasing use of public lands.
- The existing transportation network will be sufficient to meet the demand of recreational OHV opportunities.
- There will be sufficient opportunities to meet the demand for non-motorized recreation (e.g., hiking, mountain biking, equestrian).
- Demands for all types of recreation experiences will increase—particularly demands for semi-primitive motorized, semi-primitive non-motorized, and primitive recreation.
- Demand for Special Recreation Permits (SRP) will increase during the life of the plan.

Impact analyses and conclusions are based on interdisciplinary team knowledge of resources in the RFO, review of existing literature, and information provided by other agencies. Effects are quantified when possible. In absence of quantitative data, best professional judgment was used. Spatial analyses were conducted using GIS data and analyses. Impacts are described using ranges of potential impacts or in qualitative terms, if appropriate.

Environmental Consequences

Impacts to recreation would likely result from actions proposed under the following resource programs:

- Water Resources
- Vegetation and Fire and Fuels Management
- Visual Resources
- Special Status Species

- Fish and Wildlife
- Wild Horses and Burros
- Non-WSA Lands with Wilderness Characteristics
- Recreation
- Travel Management
- Lands and Realty
- Minerals and Energy
- Special Designations.

Other programs were determined to have little or no impact on recreation. There are no WSA decisions that would impact recreation.

Alternative N: No Action

Impacts from Water Resources

Decisions proposed for water quality and the protection of groundwater would also benefit recreational uses by maintaining the quality and quantity of public water sources and natural springs. Maintaining a 500-foot buffer zone of no surface disturbance and/or occupancy around natural springs would continue to restrict commercial permit holders from camping in these areas. General recreation visitors would also be displaced where fencing is constructed to maintain these buffer zones. However, in most cases there are adequate opportunities for camping away from natural springs. The impacts from potential displacement would range from negligible to minor. In the long term, recreational opportunities such as birding and hunting could be enhanced because habitat within the buffer zone and water quality would be improved.

Impacts from Vegetation and Fire and Fuels Management

Depending on the type, scope, and intensity, vegetation treatments and fire and fuels management could directly impact recreation settings and the associated visitor experiences as well as the possible realization of specific benefits. Impacts in treated areas could range from negligible to moderate. The duration of the impacts would be dependent on the type of treatment being applied as well as the acreage and success of ESR treatments. In the long term, managing vegetation resources to achieve *Fundamentals of Rangeland Health* and desired vegetation conditions, including the control of noxious weeds, invasive species, and insects, would improve the condition of the landscape and enhance recreation experiences and settings. Vegetation treatments would also indirectly improve wildlife-related recreation opportunities as a result of improved wildlife habitat.

Impacts from management activities in riparian areas, specifically buffer zones along streams, would be the same as discussed for this alternative in Impacts from Water.

Impacts from Visual Resources

Managing the RFO according to VRM classes could impact recreation experiences depending on the VRM class assigned and the experience desired. Any new facilities, new types of commercial activities, or other surface-disturbing activities would be analyzed on a case-by-case basis and would be required to meet VRM objectives or be relocated.

Under this alternative, 529,500 acres (25% of the lands within the RFO) would continue to be managed to meet VRM Class II objectives. The character of the landscape would be maintained in these areas and enhance the recreation experience, especially for those users seeking a more undeveloped setting. Some projects could still be allowed that could result in localized impacts to the landscape and thus the recreation experience, which would range from negligible to minor, depending on the type of project.

Managing 569,000 acres (27% of the RFO) as VRM Class III would allow moderate changes to the landscape. While specific impacts would depend on the type and location of projects, they would range from minor to moderate. Class III areas should still support a wide variety of recreational opportunities and experiences. The remaining area, 1,029,500 acres (48% of the RFO), would continue to be managed as VRM Class IV, which allows for major modification of the landscape. Class IV areas would allow for development of recreation-related facilities, if necessary, and would continue to support and possibly enhance motorized recreation opportunities such as driving for pleasure, vehicle-supported camping, and OHV riding. The non-motorized recreation experience could be diminished in areas in which the surface is disturbed and the landscape altered. Impacts would be long term, and depending on what projects are proposed, could range from minor to major.

Impacts from Special Status Species

SSS were not specifically addressed in existing plans. All federal actions would be subject to the requirements of the Endangered Species Act of 1973, as amended. For recreation resources, this would include such things as facility construction, issuance of Special Recreation Permits, or trailhead improvements. Any action potentially affecting any listed threatened or endangered species would require the appropriate level of Section 7 consultation with U.S. Fish and Wildlife Service (USFWS). Necessary mitigation, such as timing and avoidance, would be implemented to protect listed plant and animal species. If adequate mitigation could not be applied to the proposal, it would be relocated or denied.

Impacts from Fish and Wildlife

Improving wildlife habitat would help maintain or improve fish and wildlife populations, which would be beneficial for recreation opportunities such as wildlife viewing, hunting, and fishing. Depending on the scope and intensity of habitat improvement efforts, impacts to recreational opportunities could be mixed. Modification of physical recreational settings could have impacts similar to those described in the Impacts to Vegetation section. Impacts could range from negligible to moderate.

Impacts from Wild Horses and Burros

The Canyonlands Herd Management Area (HMA) would continue to be managed as a wild burro HMA, resulting in the opportunity for the public to view the wild burros while in the Robbers Roost area. Although considered a negligible benefit because few visitors seek that experience alone and only a portion see the wild burros, it could enhance their recreation experience.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under this alternative, resulting in no impacts to recreation.

Impacts from Recreation

Limiting or controlling recreation activities to support the *Standards for Public Land Health* and *Guidelines for Recreation Management* for BLM Lands in Utah and to protect resources could result in some localized closures or limitations on public use. The impacts would be dependent on the extent of the closures/limitations necessary, but they would be expected to be negligible to minor.

Continuing to manage a large portion of the RFO as an ERMA would allow a variety of recreational opportunities in a less structured setting. No new SRMAs would be established. Yuba Reservoir SRMA would continue to be managed by the Fillmore FO (and is therefore not addressed in this Proposed RMP revision). Under this alternative, emphasis would be placed on maintaining a non-structured setting, subject to change as recreation uses change. Special management objectives to maintain the desired recreational opportunities and settings for specific areas would not be realized. In the long term, moderate

impacts could result as visitation increases and new recreation activities develop. Potential user conflicts and degradation of the resource settings due to overuse are possible.

SRPs would continue to be issued on a case-by-case basis with no management plan direction for issuance of commercial, competitive, organized group, and vending permits. Given substantial increases in workload as permit applications increase, the current case-by-case authorization is inefficient. This process may eventually preclude some recreation providers from making available certain recreation opportunities. This could lead to minor-to-moderate impacts, which could increase as demand for SRPs increase.

Impacts from Travel Management

Under Alternative N, 1,636,400 acres (77% of the RFO) would continue to be open for cross-country vehicle travel, the most of any alternative. Conflicts between motorized and non-motorized users and the potential for resource degradation would continue to increase, which could result in a long-term, moderate impact to recreation settings and opportunities. Recreation settings would be maintained and protected within the 277,600 acres (13%) designated as limited for OHV use and the 4,315 miles of routes open to motorized use would provide access. The 214,000 acres (10%) of the RFO designated as closed to OHV use would further maintain and protect the semi-primitive to primitive setting in those areas.

No restrictions would be placed on motorized use off of designated routes for parking/staging and access to campsites, except within WSAs. There are also no decisions for the use of motorized vehicles for retrieval of game kills. This would continue to enhance some motorized activities but could result in long-term minor-to-major impacts to resources and recreation settings.

Impacts from Lands and Realty

Land tenure decisions include criteria regarding the disposal and acquisition of lands with high-value recreation opportunities. These decisions could enhance the recreation opportunities and management of areas if high-value recreation and access are considered.

The four ACECs and five developed recreation sites in the Henry Mountains would be proposed for withdrawal from mineral entry, making the total withdrawn and proposed withdrawal acreage 169,480 (8% of the RFO). This could protect existing recreational opportunities within the ACECs and protect investments at the recreation sites.

If wind or solar energy were developed in the lands managed by the RFO, it could adversely affect the recreation setting. Introducing large wind structures and solar arrays would be noticeable. Depending on the setting and opportunities in the area, this type of development could displace some recreational visitors. The impact would range from minor to major, depending on the extent of development of these energy alternatives.

Impacts from Minerals and Energy

Recreation settings, opportunities, and experiences could be impacted during all phases of minerals development. Minerals-related exploration, development, and access road and infrastructure construction would create surface disturbances, noise, and light pollution. These impacts would be greatest if development occurred in semi-primitive to primitive areas with natural-appearing landscapes. Concentrations of wells or other mineral infrastructure could also result in localized changes to the recreational opportunities and experiences available in that area.

Adherence to best management practices outlined in mining laws, plans of operation, pertinent restrictions, standard terms and conditions, etc., would help minimize such impacts. Closing 459,700

acres to fluids mineral leasing, withdrawing 169,480 acres to mineral entry, and closing 459,700 acres to mineral material disposal would eliminate risks to recreation settings from minerals management within those areas. The potential for development varies within different portions of the planning area (Table 4-39). However, development potential is low in the eastern portion of the planning area, where the majority of the primitive to semi-primitive, natural-appearing landscapes occur and where development would be most likely to impact recreation settings and experiences.

Overall, impacts to recreation would be minor.

Impacts from Special Designations

Wild and Scenic Rivers

Management of the 12 eligible Wild and Scenic River segments (135 miles)—to protect their outstandingly remarkable values, free-flowing nature, and tentative classification—would maintain the recreation settings along those segments. The majority of these segments are tentatively classified as "wild" and the decision would support the semi-primitive and primitive recreation opportunities. Portions of the Dirty Devil River, Robbers Roost Canyon, Twin Corral Box Canyon, and all of the Beaver Wash Canyon, No Mans Canyon, Larry Canyon, and Sams Mesa Box Canyon overlap with WSAs that provide similar protection of recreation settings. Overall, the impact from this decision would be negligible.

Areas of Critical Environmental Concern

Continuing the present management of the four existing ACECs would maintain the primitive and semi-primitive non-motorized recreational opportunities in those areas.

Alternative A

Impacts from Water Resources

Impacts would be similar to those discussed under Alternative N. The buffer zone around natural springs would be reduced to 330 feet, increasing the camping opportunities slightly over Alternative N.

Impacts from Vegetation and Fire and Fuels Management

Impacts from vegetation and fire and fuels management would be similar to those discussed under Alternative N except that maximum treatment acreage limits would be established (averaging 73,600 annually for all treatments). This may result in greater success for restoring the landscape to its natural condition, further enhancing recreation experiences and settings.

In addition, the buffer zone along streams would be reduced to 330 feet, increasing the camping opportunities slightly over Alternative N.

Impacts from Visual Resources

Under Alternative A, 446,900 acres (21% of the RFO) would be designated as VRM Class I (these acres are within the WSAs). The character of the landscape in these areas would be maintained and enhanced, especially for those users seeking the opportunity for solitude and primitive/unconfined recreation in an undeveloped landscape. Recreation projects and developments would only be allowed if they were consistent with VRM class objectives. Any impacts would be localized and would range from negligible to minor, depending on the type of project. There would be 392,800 acres (18% of the RFO) designated as VRM Class III, slightly less than Alternative N. The remaining 1,288,300 acres (61% of the RFO) would be designated as VRM Class IV, the most of any alternative.

Impacts from Special Status Species

Closing and reclaiming roads to avoid or reduce habitat fragmentation could have a minor to moderate effect on recreational opportunities. The level of impact would depend on the number of roads closed or the amount of recreation use the road receives. Proposed management for SSS and raptor habitats would result in species-specific buffers and seasonal, temporal, and spatial restrictions. These restrictions would likely have the greatest effect on commercial recreation permit holders, making some proposed trips uneconomical to offer and difficult logistically, but impacts are expected to be minor. If restrictions become necessary in areas managed as open to cross-country OHV use, the effect on the recreational opportunities would have a minor to moderate effect. Under this alternative, the opportunities for cross-country OHV use (e.g., open OHV areas) have been reduced by 56% from Alternative N. These closures of open OHV areas would be more noticeable to those recreational users seeking a cross-country experience.

Impacts from Fish and Wildlife

Impacts would be similar to those described under Alternative N. Cross-country OHV use would be limited in some habitat areas, which would restrict public land users from creating new routes in these areas, thus protecting the general recreation setting and decreasing conflicts between users. The impact would be minor to moderate.

Impacts from Wild Horses and Burros

Impacts would be the same as those described for Alternative N.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under this alternative, resulting in no impacts to recreation.

Impacts from Recreation

Impacts under this alternative would be similar to Alternative N in regards to decisions supporting rangeland health and protecting resources.

Under Alternative A, 514,500 acres (24% of the RFO) would be managed under five SRMAs. Management objectives through the development of activity plans would provide visitors with higher quality recreation opportunities through the more focused and effective management of the desired settings, activities, and experience opportunities appropriate for each SRMA. Factory Butte, Big Rocks, and Sahara Sands SRMAs would focus on motorized recreation opportunities and provide a variety of riding experiences (e.g., Mancos Shale hill climbs, rock crawling, and sand dunes). The Dirty Devil and Otter Creek SRMAs would maintain the dispersed recreation opportunities. Impacts to recreation settings would range from negligible to moderate, as these SRMAs would maintain the experiences and opportunities currently occurring in these areas. The remainder of the lands would be managed as an extensive recreation management area, which would continue to support a variety of recreational opportunities in a less structured setting. However, with 1,613,500 acres (76%) of the area receiving no specific management direction for recreation opportunities, there would continue to be conflicts between user groups seeking varied experiences that may be viewed as incompatible. These impacts could range from minor to moderate and would continue to increase as recreation uses grow and change.

The use of management decisions for the issuance of SRPs provides direction regarding the types of permits that would be issued, areas in which some types of permits would not be appropriate, and thresholds for organized group permits. These decisions would allow for a variety of SRPs to be issued while providing greater resource protection. Processing would also be streamlined by having management

plan criteria to compare to applications. The benefits to applicants would be minor to moderate, depending on the complexity of their proposal.

Impacts from Travel Management

Alternative A would designate 449,000 acres (21% of the RFO) as open to cross-country OHV use. These managed open play areas would provide a variety of motorized opportunities scattered throughout the management area. The areas identified as open include most of the areas currently being used for cross-country OHV recreation, which would be beneficial for motorized users. The remainder of the management area, 1,679,000 acres (79% of the RFO), would be limited to designated routes with a total of 4,312 miles of routes, similar to Alternative N. Limiting OHV use to designated routes within a larger portion of the area would maintain and enhance the recreation experiences for the majority of users and reduce conflicts. Opportunities for cross-country motorized use would be reduced; however, the impacts from this alternative would be negligible to minor. Designating no closed areas could reduce opportunities for solitude and primitive/unconfined recreation. Areas within WSAs currently closed to any motorized use would be available for limited OHV use on designated, inventoried routes consistent with the IMP. This would be an increase of 18 miles of inventoried routes available over Alternative N. The overall impacts would be minor, due to the low number of miles, but could potentially impact opportunities for primitive recreation along those routes.

Management decisions to limit parking/staging and motorized access for camping would continue to provide those recreation opportunities while maintaining the overall recreation settings. Allowing non-motorized, wheeled game carriers to retrieve game kills outside of WSAs would continue to enhance hunting opportunities.

Impacts from Lands and Realty

The impacts would be the same as described for Alternative N.

Impacts from Minerals and Energy

The impacts would be similar to those described under Alternative N. Areas closed or withdrawn for minerals are slightly less in this alternative: 446,900 acres closed to oil and gas leasing, 154,700 acres withdrawn from mineral entry, and 446,900 acres closed to salable mineral disposal. Overall, impacts to recreation would still be minor.

Impacts from Special Designations

Wild and Scenic Rivers

No eligible river segments would be managed as suitable for inclusion in the National Wild and Scenic River System under Alternative A. However, 98 of the 135 miles of eligible WSR segments are within WSAs that would continue to be managed under the IMP, providing protection of the recreation settings. The majority of the eligible Dirty Devil River segment and all of the eligible Robbers Roost Canyon, Twin Corral Box Canyon, Beaver Wash Canyon, No Mans Canyon, Larry Canyon and Sams Mesa Box Canyon segments would receive management protection from the proposed Dirty Devil SRMA, retaining the semi-primitive to primitive recreation settings in those areas. Overall, the potential for impacts to recreation under this alternative would be negligible.

Areas of Critical Environmental Concern

No ACECs are proposed for designation under Alternative A. There would no longer be protective ACEC management for the four existing ACECs. However, three of the four existing ACECs are within WSAs, which would continue to protect the relevant and important values and preserve the recreation setting in those areas. Removing protective ACEC management prescriptions for North Caineville Mesa could

result in changes to the recreation setting and opportunities if surface disturbance and development were to occur. However, due to the topography and lack of access, the probability of impacts would be low.

Proposed RMP

Impacts from Water Resources

Impacts would be the same as described under Alternative A.

Impacts from Vegetation and Fire and Fuels Management

Impacts would be the same as described under Alternative A.

Impacts from Visual Resources

Under the Proposed RMP, the acreage and impacts for VRM Class I lands would be the same as described under Alternative A (446,900 acres, or 21% of the RFO). Under this alternative, 249,800 acres (12% of the RFO) would be designated as VRM Class II; 393,100 acres (18% of the RFO) would be designated as VRM Class III; and the remaining 1,038,200 acres (49% of the RFO) would be designated as VRM Class IV. The VRM Class II and III acres would be less than in Alternatives N and C, but more than Alternatives A and D. VRM Class IV acreage would be more than in Alternatives N, C, and D, but less than Alternative A. Although future recreation-related projects would be restricted in Class I and II areas, this would maintain the recreation settings and the visual components of the landscape. Any adverse impacts to recreation would be localized and would range from negligible to minor.

Impacts from Special Status Species

Closing and reclaiming roads to avoid or reduce habitat fragmentation could have a minor to moderate effect on recreational opportunities. The level of impact would depend on the number of roads closed or the amount of recreation use the road receives. Proposed management for SSS and raptor habitats would result in species-specific buffers and seasonal, temporal, and spatial restrictions. These restrictions would likely have the greatest effect on commercial recreation permit holders, making some proposed trips uneconomical to offer and difficult logistically, but impacts are expected to be minor. If restrictions become necessary in areas managed as open to cross-country OHV use, the effect on the recreational opportunities would be minor to moderate. Under this alternative, the opportunities for cross-country OHV use in open OHV areas have been reduced by 77% from Alternative N. Therefore, further closures of open OHV areas would be noticeable to those recreational users seeking a cross-country experience. Conflicts between motorized users and safety concerns could increase by further concentrating motorized use into smaller open areas.

Impacts from Fish and Wildlife

Impacts would be less than those described under Alternative A. Cross-country OHV use would be limited to designated routes in most wildlife habitat areas, protecting the general recreation setting and decreasing conflicts between users in additional areas.

Impacts from Wild Horses and Burros

Impacts would be similar to those described under Alternative N. As management prescriptions would increase the burro herd and its genetic viability, the potential for viewing the burros could also increase, increasing beneficial impacts.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under the Proposed RMP, 78,600 acres (4% of the RFO) would be managed with the goal of protecting, preserving, and maintaining the wilderness characteristics of non-WSA lands with wilderness characteristics. Motorized uses would be limited to designated routes, resulting in areas that currently

exist as semi-primitive motorized settings becoming semi-primitive and non-motorized in terms of remoteness, reducing motorized recreational opportunities in some areas. Other areas as closed because of other resource management decisions. Coupled with the adjoining WSAs, the Proposed RMP would result in 525,500 acres (25% of the RFO) being managed for semi-primitive motorized use along designated routes to primitive recreation away from these routes. This would be a beneficial impact for the recreationists seeking a more semi-primitive to primitive experience. Maintaining OHV use along designated routes would maintain access into many of these areas, although there would be portions of these areas that would become more difficult and physically unfeasible for many visitors, which would impact those who seek motorized recreation opportunities. A total of 3,739 miles of routes would be limited to designated routes with seasonal closures or size/width restrictions for motorized travel under the Proposed RMP, a reduction of 576 miles from Alternative N. The need to hike for long distances across dry benchlands to reach preferred destinations could displace some users seeking a semi-primitive to primitive experience.

Impacts from Recreation

Impacts under the Proposed RMP would be similar to Alternative A, with the exception that the acreage and locations of the proposed SRMAs change somewhat. Under the Proposed RMP, 860,390 acres (40% of the RFO) would be managed under five SRMAs. Factory Butte and Big Rocks SRMAs would focus on motorized recreation opportunities and provide a variety of riding experiences (e.g., Mancos Shale hill climbs, rock crawling).

Some users of the proposed Factory Butte SRMA are repeat visitors, but many are visiting the area for the first time and will need to have information available at entrance points and on the ground in order to comply with the motorized designations. Providing increased information on the ground through kiosks and improved signage would better educate the public regarding the types of uses they can participate in, helping them avoid illegal use or reducing misconceptions for visitors from out of the area that illegal use is taking place. It also allows them to choose an area where the recreation uses are consistent with the experience they seek.

While it is preferable that topographic barriers be used when possible—which is the case with a portion of the boundary for the Factory Butte OHV Play Area RMZ—the majority of the boundaries there are not distinct topographic barriers; therefore, fencing or carsonite posts would be necessary (Appendix 18). The proposed Factory Butte OHV Play Area RMZ includes the Swing Arm City Open Area (2,600 acres) and Caineville Cove Inn Open Area (100 acres). Providing clear and enforceable boundaries for the OHV open areas would lead to less confusion among riders as to where the boundary is located, resulting in greater compliance with management prescriptions and a reduction in possible citations that negatively impact the recreational experience.

The addition of improved amenities should provide a positive benefit for visitors to the area. The addition of improved access into the OHV open area, loading/unloading ramps, and restrooms would be beneficial for the health and safety of visitors to the area. Providing one all-weather access road into the OHV Play Area RMZ would improve the safety for visitors. There are currently several user-developed access routes—two of which are close to a curve in the highway, making visibility an issue. In addition, during inclement weather, this area can quickly become impassable, making it difficult to get off of Highway 24. The improved access road would allow visitors to get safely off of the highway before stopping, parking, or unloading. Providing loading/unloading ramps would give visitors a safer option to unload machines on a surface level with their truck or trailer bed. Although some visitors to the OHV open area are in self-contained camping units, other visitors to the OHV open area and surrounding areas do not have self-contained units. The addition of restrooms would provide for appropriate sanitation and help protect the health and safety of all visitors to the area.

The Henry Mountains, Dirty Devil, and Capitol Reef Gateway SRMAs would focus on dispersed recreation opportunities. These SRMAs would maintain the experiences and opportunities currently occurring in these areas, which range from semi-primitive motorized to primitive. The remainder of the lands, 1,267,610 acres (60% of the RFO), would be managed as an extensive recreation management area that would continue to support a variety of recreational opportunities in a less structured setting. This alternative provides more of a balance and variety of structured (SRMA) and non-structured (ERMA) opportunities than any of the other alternatives and should reduce the potential for conflicts between user groups seeking varied experiences.

Impacts from Travel Management

Less than 1% (9,890 acres) of the RFO would be open to cross-country OHV use under this alternative. Conflicts between non-motorized and motorized users would be reduced overall but would continue due to motorized users being displaced from historical use areas. Conflicts between motorized users and safety concerns could increase by concentrating motorized use into small, managed open areas. This alternative would result in moderate-to-major impacts to motorized users seeking a cross-country motorized experience. Designating 1,908,210 acres (90% of the RFO) as limited and 209,900 acres (10% of the RFO) as closed to OHV use would maintain and enhance the recreation experiences in those areas. Designation of 4,277 miles of routes would be a reduction from what is available in Alternatives N and A. Limiting OHV use to designated routes within a larger portion of the area would maintain and enhance the recreation experiences for the majority of users and reduce conflicts. Opportunities for primitive recreation would be greater than in Alternative A through the designation of some closed acres.

Management decisions to limit parking/staging and motorized access for camping and game retrieval would be similar to Alternative A. Distances for motorized access would be reduced from 300 feet in Alternative A to 150 feet in the Proposed RMP, which would reduce opportunities slightly.

Impacts from Lands and Realty

The impacts would be similar to those described under Alternative N. The two potential ACECs, one suitable wild river, and five developed recreation sites in the Henry Mountains would be proposed for withdrawal from mineral entry; combined with the existing withdrawals, a total acreage of 176,200 (9% of the RFO) would be withdrawn from mineral entry and be precluded from surface disturbance due to mining activity. This would be a slight increase over Alternatives N and A and would help maintain the recreation settings and protect investments at developed recreation sites. Limiting the areas in which these developments take place would reduce the potential for impacts from wind and solar energy development. These criteria would protect areas in which these types of developments would have the greatest impact on recreational opportunities (e.g., WSAs, WSR corridors, ACECs, areas open to oil and gas leasing with NSO, and VRM Class I and II areas).

Impacts from Minerals and Energy

The impacts would be similar to that described under Alternative A. Areas closed or proposed for withdrawal for minerals are slightly more than Alternative A: 447,300 acres closed to oil and gas leasing, 176,200 acres withdrawn from mineral entry, and 601,800 acres closed to salable mineral disposal.

Impacts from Special Designations

Wild and Scenic Rivers

The impacts from WSR decisions would be similar to those discussed under Alternative N. Under this alternative, only the Fremont River (Fremont Gorge) would be recommended and managed for suitability as a WSR. Some other eligible segments would still receive protective management from overlapping WSAs. Overall, impacts would be negligible.

Areas of Critical Environmental Concern

Under this alternative, two ACECs would be designated: North Caineville Mesa and Old Woman Front. Management prescriptions to protect the relevant and important values for these 2,530 acres, such as closing the areas to OHV use and NSO for minerals would preserve the semi-primitive-non-motorized to primitive recreation opportunities in these areas. Overall, the impact would be negligible.

Alternative C

Impacts from Water Resources

Impacts would be similar to those discussed under Alternative N. The buffer zone around natural springs would be increased to 660 feet, reducing the camping opportunities slightly over Alternative N.

Impacts from Vegetation and Fire and Fuels Management

Under Alternative C, impacts would be similar to those discussed under Alternative N except that only treatment methods that mimic natural processes would be used to achieve or maintain *Fundamentals of Rangeland Health* and desired vegetation condition, including control of noxious weeds and invasive species. No control measures would be implemented to control insect pests. These processes would be the least disturbing and may not alter recreational patterns in the short term as much as other techniques. However, these treatment methods could be ineffective for managing vegetation or controlling invasive species in some areas, resulting in repeat treatments and impacting the recreation setting and experiences in the long term.

Impacts would be similar to those discussed under Alternative N. The buffer zone along streams would be increased to 660 feet, reducing the camping opportunities slightly over Alternative N.

Impacts from Visual Resources

Under Alternative C, the acreage and impacts for lands designated as VRM Class I would be the same as described under Alternative A and the Proposed RMP (446,900 acres, or 21% of the RFO). Under this alternative, 230,600 acres (11% of the RFO) would be designated as VRM Class II; 509,100 acres (24% of the RFO) would be designated as VRM Class III; and the remaining 941,400 acres (44% of the RFO) would be designated as VRM Class IV. Designating the majority of the RFO as VRM Class III or IV could result in large areas of moderate to major modifications in the existing character of the landscape, which could alter the recreation settings. However, less of the RFO would be designated in these VRM classes than in Alternatives N, A, or the Proposed RMP, resulting in less potential impacts to recreation as compared to those alternatives.

Impacts from Special Status Species

Closing and reclaiming roads to avoid or reduce habitat fragmentation could have a minor to moderate effect on recreational opportunities (e.g., reducing access while improving semi-primitive to primitive opportunities). The level of impact would depend on the number of roads closed or the amount of recreation use the road receives. Proposed management for SSS and raptor habitats would result in species-specific buffers and seasonal, temporal, and spatial restrictions. These restrictions would likely have the greatest effect on commercial recreation permit holders, making some proposed trips uneconomical to offer and difficult logistically, but impacts are expected to be minor. There would be no effects to recreational users from SSS restrictions in open OHV areas because none are proposed in this alternative.

Impacts from Fish and Wildlife

Impacts would be the same as those described under the Proposed RMP.

Impacts from Wild Horses and Burros

Impacts would be the same as those described under the Proposed RMP.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under this alternative, resulting in no impacts to recreation.

Impacts from Recreation

Impacts under this alternative would be similar to the Proposed RMP. Under this alternative, 930,000 acres (44% of the RFO) would be managed under four SRMAs. Management of the Henry Mountains, Dirty Devil, Capitol Reef Gateway, and Sevier Canyon SRMAs would provide specific direction to maintain and enhance the semi-primitive motorized and primitive recreation settings in those areas. No SRMAs would be established to emphasize cross-country motorized opportunities because there are no open OHV areas proposed in this alternative. This alternative would result in minor-to-moderate impacts and could result in increased conflict by displacing some users whose activities may no longer be consistent with the types of SRMAs proposed.

Impacts from Travel Management

Under Alternative C, no areas would be available for cross-country OHV use. This would result in a major impact to motorized users seeking a cross-country motorized experience. That specific recreation opportunity would no longer exist within the RFO. Designating 1,445,000 acres (68% of the RFO) as limited and 683,000 acres (32% of the RFO) as closed to OHV use would maintain and enhance the recreation experiences in those areas. Designation of 3,192 miles of routes would be a reduction of 1,123 miles of routes from what is available under Alternative N, resulting in minor-to-moderate impacts for access to recreation destinations. The potential for primitive recreation opportunities would be enhanced over Alternatives N, A, and the Proposed RMP by having additional acres closed to OHV use.

Management decisions to limit parking/staging off of designated routes would be reduced to 25 feet, and campsites with motorized access would be designated. This alternative would preclude the use of mechanized game carriers. These decisions would further protect resources and semi-primitive to primitive settings but would displace some users. These decisions would result in minor-to-moderate impacts to recreational opportunities that are dependent on access, dispersed camping, and game retrieval by potentially limiting these opportunities.

Impacts from Lands and Realty

The impacts would be similar to those described under the Proposed RMP. The acreage recommended for withdrawal from mineral entry would increase to 331,100 acres (16% of the RFO) and include all or parts of eight ACECs, all suitable WSR segments, and the five developed recreation sites in the Henry Mountains. This is a 7% increase over the Proposed RMP, which would further reduce surface disturbance, maintain the recreation settings, and protect investments at the recreation sites.

Impacts from Minerals and Energy

The impacts would be similar to those described under the previous alternatives. The areas closed or withdrawn from mineral entry would increase over the previously discussed alternatives, providing additional protection of the recreation settings in the more undeveloped portions of the planning area: 586,300 acres closed to oil and gas leasing; 331,100 acres withdrawn from mineral entry; and 586,300 acres closed to salable mineral disposal.

Impacts from Special Designations

Wild and Scenic Rivers

Impacts would be the same as those described under Alternative N.

Areas of Critical Environmental Concern

Under this alternative, all potential ACECs would be designated, totaling 16 areas with 886,810 acres (42% of the RFO). Management prescriptions to protect the relevant and important values—such as closing or limiting areas to OHV use, designating Class A scenery outside WSAs as VRM Class II, and NSO for minerals—would complement other recreation decisions and preserve the recreation settings in those areas. Overall, the impact would be negligible to minor.

Alternative D

Impacts from Water Resources

Impacts would be the same as those described under Alternative C.

Impacts from Vegetation and Fire and Fuels Management

Impacts would be the same as those described under Alternative C.

Impacts from Visual Resources

Under Alternative D, the acreage designated as VRM Class I would be 1,129,600 acres (53%), the most of any alternative. This alternative would designate 66,700 acres (3%) of the RFO as VRM Class II; 355,100 acres (17%) as VRM Class III; and the remaining 576,600 acres (27%) as VRM Class IV. This alternative would have the most VRM Class I and II acreage of any of the alternatives, providing the most protection for undeveloped recreation settings and the visual components of the landscape. VRM Class III and IV acreage would be the least under this alternative, providing the least opportunities for the development of facilities for those visitors seeking a more developed setting or if facilities are necessary for resource protection. This may result in moderate site-specific impacts.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative C.

Impacts from Fish and Wildlife

Impacts would be the same as those described under the Proposed RMP.

Impacts from Wild Horses and Burros

Impacts would be the same as those described under the Proposed RMP.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under Alternative D, 682,600 acres (32% of the RFO) would be managed with the goal of protecting or preserving the wilderness characteristics of non-WSA lands with wilderness characteristics. Implementation of this alternative would result in major impacts to recreational settings and opportunities. These areas would be closed to motor vehicle use, resulting in large areas that currently exist as semi-primitive motorized settings becoming semi-primitive, non-motorized in terms of remoteness, effectively reducing motorized recreational opportunities. Coupled with the adjoining WSAs, this alternative would result in 1,129,500 acres (53% of the RFO) being managed for semi-primitive to primitive non-motorized recreation. This would be a beneficial impact for the recreationists seeking a more semi-primitive to primitive experience. However, it should be noted that because of the large areas that would be closed to OHV use, access into many of these areas would become more difficult and physically unfeasible for

many visitors, which would impact those who seek motorized recreation opportunities. A total of 3,043 miles of routes would be designated as open for motorized travel under this alternative, a reduction of 1,272 miles from Alternative N. This would include access routes to some existing trailheads (e.g., Angel Trail East, Robbers Roost Spring, Larry's Canyon, and Horseshoe Canyon [Deadman's Trail]). The need to hike for long distances across dry benchlands to reach canyon destinations would also displace some users seeking a semi-primitive to primitive experience.

Impacts from Recreation

Impacts would be similar to Alternative C except that the SRMA acreage is much larger under Alternative D than in any other alternative. Under this alternative, 1,358,100 acres (64% of the RFO) would be managed under seven SRMAs. Management of the Henry Mountains, Dirty Devil, portions of the Capitol Reef Gateway, portions of East Fork Sevier River, San Rafael Swell, Little Rockies, and Labyrinth Canyon SRMAs would be managed to maintain and enhance primitive and semi-primitive recreation. The remainder of the Capitol Reef Gateway and E. Fork Sevier River SRMAs would be managed for dispersed recreation. Managing 64% of the FO for semi-primitive to primitive recreation with large areas closed to OHV use would benefit those recreationists seeking that type of experience. However, some existing trailheads (e.g., Angel Trail East, Robbers Roost Spring, Larry's Canyon, and Horseshoe Canyon [Deadman's Trail]) would no longer be accessible by vehicle, and some primitive recreationists may be displaced because of longer hiking distances on the dry benchlands to reach destinations in the canyons. These impacts would be greatest in the Henry Mountains, Dirty Devil, and San Rafael Swell SRMAs. No SRMAs would be established to emphasize cross-country motorized opportunities because there are no open OHV areas proposed in this alternative. This alternative would result in moderate-to-major impacts and could result in increased conflict by displacing users whose activities may no longer be consistent with the types of SRMAs proposed.

Impacts from Travel Management

The impacts of Alternative D would be similar to Alternative C. However, there would be minor to moderate beneficial and adverse impacts from designating 1,155,200 acres (54% of the RFO) as closed to OHV use. Managing large closed areas would maintain a primitive recreation setting and provide improved opportunities for non-motorized experiences, solitude, and unconfined recreation. This management would benefit recreationists seeking a primitive recreation experience. However, some existing trailheads (e.g., Angel Trail East, Robbers Roost Spring, Larry's Canyon, and Horseshoe Canyon [Deadman's Trail]) would no longer be accessible by vehicle, and some primitive recreationists may be displaced because of longer hiking distances to reach destinations in the canyons. There would continue to be 972,800 acres (46% of the RFO) designated as limited to OHV use. Designated routes would total 3,043 miles, the least of any alternative. This would improve semi-primitive to primitive opportunities but would displace motorized users, including those wanting to access existing trailheads to more remote areas. The potential effects to all recreationists using motorized vehicles to access the area would be greatest in this alternative.

The impacts in this alternative for parking/staging and motor vehicle access to campsites and game retrieval would be the same as described under Alternative C.

Impacts from Lands and Realty

The impacts would be similar to those described under the Proposed RMP. The acreage recommended for withdrawal from mineral entry would increase to 903,900 acres (42% of the RFO) and include all or portions of eight ACECs, all suitable WSR segments, and the five developed recreation sites in the Henry Mountains. It would also include all non-WSA lands with wilderness characteristics, which would ensure protection of wilderness characteristics and the setting needed to support primitive and unconfined forms

of recreation in these areas. This would significantly reduce surface disturbance, maintain semi-primitive to primitive recreation settings, and protect investments at the recreation sites.

Impacts from Minerals and Energy

The impacts would be similar to those described under Alternative C. This alternative would provide the most protection of recreation settings by closing 1,160,500 acres to fluids mineral leasing, withdrawing 903,900 acres to mineral entry, and closing 1,160,500 acres to mineral material disposal. Overall, the impacts to recreation would be negligible to minor under Alternative D.

Impacts from Special Designations

Wild and Scenic Rivers

Impacts would be the same as those described under Alternative N.

Areas of Critical Environmental Concern

Under this alternative, the impacts from ACEC designations would be similar to those discussed for non-WSA lands with wilderness characteristics. ACEC management prescriptions would be adjusted in this alternative for consistency with management decisions for non-WSA lands (e.g., restrictions on surface disturbances and OHV use).

4.4.4 Travel Management

This section describes potential impacts on travel management resulting from the implementation of management actions for other resource programs. Impacts on resources and resource uses resulting from implementation of the travel management program are discussed in those particular resource sections of this chapter.

The travel management program provides for ingress, egress, and access in the RFO. The transportation network consists of 4,380 miles of roads and trails, mostly unpaved, that provide access into and across the RFO. Various individuals rely on this network to access livestock operations, mining properties, utility and communication facilities, range and wildlife developments, wildfire prevention/management and suppression, recreation sites, as well as the public lands in general for a myriad of recreational activities, and intermingled private and state-owned lands. Management decisions that involve changes to miles of roads open for public or administrative use, number of acres open to off-road travel, or specific travel restrictions (vehicle size, seasonal restrictions, etc.) would affect access into and across the RFO. The following discussion of the effects on transportation and access focuses on management actions that restrict or facilitate travel management opportunities. Impacts on opportunities for OHV use are addressed in the recreation impact analysis.

This analysis describes the degree of access and the extent of usable transportation systems within the RFO and its effects on both motorized travel. This includes decisions that would limit the degree of travel opportunities and the ability to access certain portions of the decision area. The majority of motorized access issues are related to OHV use; this form of transportation provides a major source of travel opportunities. Mechanized travel involves primarily mountain bikes but could also include other forms of non-motorized vehicles.

Impacts to travel management, as defined above (e.g., via state-maintained highways and BLM-maintained system roads) would be anticipated primarily from route designations and the implementation of management actions that consolidate public land through purchases, exchanges, and disposal of isolated tracts.

Methods and Assumptions

The analysis was based on the following assumptions:

- The transportation network, as defined by alternative, will remain in place throughout the life of the plan.
- The BLM will evaluate RS-2477 assertions under a separate process and criteria than this planning process.

Impact analyses and conclusions are based on interdisciplinary team knowledge of resources in the RFO, review of existing literature, and information provided by other agencies. Effects are quantified when possible. In absence of quantitative data, best professional judgment was used. Spatial analyses were conducted using GIS data and analyses. Impacts are described using ranges of potential impacts or in qualitative terms, if appropriate.

Environmental Consequences

Impacts to travel management would likely result from actions proposed under the following resource programs:

- Special Status Species

- Fish and Wildlife
- Non-WSA Lands with Wilderness Characteristics
- Recreation
- Travel Management
- Lands and Realty
- Special Designations.

Other programs were determined to have little or no impact on travel management.

Alternative N: No Action

Impacts from Special Status Species

No special management is proposed in Alternative N to protect SSS. However, current policy and practices call for the protection of threatened and endangered species habitat by mitigating disturbances and prohibiting activities that destroy, adversely modify, or fragment critical habitat. Extensive limitations are not anticipated. Therefore, the overall impact to travel management would be negligible.

Impacts from Fish and Wildlife

Management strategies to avoid or reduce habitat fragmentation would include such practices as reclaiming redundant roads, reclaiming roads no longer serving intended purpose, and reducing road densities. There could be some effects on travel management, depending on the number of roads reclaimed and the existing uses of those roads, but extensive limitations are not anticipated. Motorized use would continue to be seasonally closed in the Swap Mesa and Cave Flat areas from December 20 through March 20 for the protection of bison crucial habitat. Overall, impacts to travel management and access would be negligible.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness character on those lands outside of WSAs are proposed under this alternative, so no impacts to travel management would occur.

Impacts from Recreation

No recreation management decisions are proposed in Alternative N that would affect travel management. The entire RFO (with the exception of Yuba Reservoir, which is managed by the Fillmore FO) is identified and managed as an ERMA. Management of recreation in ERMAs is restricted to custodial actions only, with no special prescriptions identified that would limit or control recreational activities, including OHV use.

Impacts from Travel Management

Under Alternative N, the majority of public lands (1,636,400 acres, 77% of the RFO) are open to motorized cross-country vehicle travel. While not all of these acres are used for cross-country travel, there are certain uses and activities that take users off established routes. Harvesting fuelwood, pine nut, and other woodland products; wildlife viewing; livestock management; and dispersed camping and hunting are some of the reasons other than motorized adventure riding that these open OHV areas are used. There are 277,600 acres (13% of the RFO) designated as limited for the protection of various resources (e.g., cultural, soils, wildlife, and plant habitats) including portions of WSAs. Of the total routes identified for the planning area, 4,315 miles are open to motorized travel, including 42 miles of inventoried routes in WSAs that would continue to be available for travel. There would be 65 miles of routes closed. Within the open and limited OHV areas, there would be no restrictions on motorized use off of designated routes for the purposes of parking/staging and access to campsites, except within WSAs. The remainder of the

RFO (214,000 acres, or 10%) is closed to OHV use. It should be noted that route designations are implementation decisions and that the resulting transportation network could change over time.

Travel throughout the RFO is expected to increase due to population growth and increased demand for recreation opportunities on public lands. One of the growing demands is for access to open areas for OHV use. As more of the public lands throughout the state restrict cross-country access, the large areas left open in the RFO could draw more interest, putting other resources at risk. In the long term, this could result in area closures (either through plan amendment or emergency order) if unacceptable impacts to resources are determined to be occurring. Impacts to travel management would be negligible to minor in the short term but could increase if additional closures become necessary.

Impacts from Lands and Realty

The disposal of 280 acres identified in the Mountain Valley Management Framework Plan (MFP) would reduce the overall amount of BLM lands available to the public for access. Due to the extremely small acreage involved, impacts would be negligible. The development of wind or solar energy could adversely affect access and travel management if access were restricted into those areas or through voluntary displacement if significant development took place. Exploration and development would be considered on a case-by-case basis. Impacts would be site specific.

Impacts from Special Designations

Wilderness Study Areas

In this alternative, the use of motorized vehicles would be limited to existing routes in 259,900 acres of the WSAs, with 42 of the 60 inventoried miles of routes designated for use by motorized vehicles. The routes that are open in WSAs would continue to allow for public access to valid existing rights, grandfathered rights, recreational and trailhead access, and for general use, in accordance with the IMP. The remaining 187,000 acres of the WSAs would be closed to motorized use. The development of new routes would not be authorized within these areas.

Wild and Scenic Rivers

The 135 miles of eligible river segments would be managed to protect their outstandingly remarkable values, free-flowing nature, and tentative classification. No management decisions are proposed to restrict access in these areas. Motorized use within these segments would be according to existing OHV designations. Many of the segments are remote and are within WSAs where motorized access is closed or limited to inventoried routes. Only 35 miles of routes exist within the eligible river segments. Therefore, the overall impact to access and travel management would be minor.

Areas of Critical Environmental Concern

The four existing ACECs would continue to be managed for the protection of their relevant and important values. These areas are and would continue to be closed to OHV use, which would not provide any additional opportunities for this type of use.

Alternative A

Impacts from Special Status Species

The impacts from the protection of threatened and endangered species habitat would be similar to Alternative N. Strategies incorporated into this alternative (e.g., closing and reclaiming roads; using species-specific buffers; and seasonal, temporal, and spatial restrictions) could affect travel management within habitat areas, but extensive limitations are not anticipated. Management actions would limit OHV use to designated routes in sage-grouse lek and nesting habitats but do not include area closures or seasonal restrictions. Route restrictions proposed in this alternative for protection of all SSS resources

total 249 miles (6% of the total designated route miles). These restrictions would have minor, site-specific impacts on travel and access in the RFO.

Impacts from Fish and Wildlife

Impacts from management strategies to avoid or reduce habitat fragmentation would be the same as described under Alternative N. Management actions would limit OHV use to designated routes in bison crucial habitat but do not include area closures or seasonal restrictions. Overall, impacts to travel management and access would be minor.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness character on those lands outside of WSAs are proposed under this alternative, so no impacts to travel management would occur.

Impacts from Recreation

Decisions to maintain and improve the Piute, Great Western, and other motorized trail systems would benefit OHV users and maintain and improve access in these areas.

Five SRMAs, totaling 514,500 acres (24% of the RFO), are proposed under Alternative A. Management of these SRMAs would provide for public access in some SRMAs and would enhance motorized use (specifically cross-country access) in other areas.

Motorized use would be limited to designated routes in a portion of the Otter Creek SRMA (1,900 acres) and all of the Dirty Devil SRMA (290,000 acres). Portions of the Dirty Devil SRMA that were closed in Alternative N would be limited to designated routes (inventoried routes within WSAs) improving access slightly.

Factory Butte (199,700 acres), Big Rocks (9,300 acres), Sahara Sands (12,300 acres), and a portion of the Otter Creek (1,300 acres) SRMAs would be managed as OHV open areas to enhance a motorized recreational experience and provide additional support (signing, interpretation, and facilities) for these motorized activities as necessary. Enhanced management would support travel management decisions for these areas. The overall impacts to travel management from recreation decisions in this alternative would be minor.

Impacts from Travel Management

Under Alternative A, 449,000 acres (21% of the RFO) would be open to motorized cross-country vehicle travel. These OHV areas would be managed as designated open areas with a variety of riding opportunities: sand dunes, Mancos Shale hill climbs, trials motorcycle, rock crawling, and community play areas. This would be a reduction in OHV open areas of 1,187,400 acres from Alternative N. While not all of these acres are used for cross-country travel, there are traditional uses that take users off established routes. Reducing the open acreage from 77% in Alternative N to 21% in this alternative significantly reduces the opportunities for cross-country OHV use and some historical uses. Fuelwood, pine nut, and other woodland products harvesting; wildlife viewing; livestock management; and dispersed camping and hunting are some of the uses other than motorized adventure riding that currently take place in these open OHV areas. As travel throughout the RFO increases, including demand for open OHV areas, this alternative may not sufficiently meet the needs for off-road access for OHV and other casual uses. However, cross-country use could still be allowed for permitted uses such as livestock management and products harvesting. If open OHV areas are not large enough to absorb the levels of use, conflicts between OHV users and safety concerns could increase. Impacts to travel management in the RFO would be moderate.

The remainder of the RFO (1,679,000 acres, or 79%) would be limited to designated routes and trails. Of the total route miles, 4,063 miles would be designated as open for use in this alternative, 249 miles of routes would be designated with seasonal closures or size/width restrictions, and 68 miles would be closed. The total designated route miles include 60 miles of inventoried routes within WSAs. Motor vehicles would be allowed to pull off of a designated route up to 100 feet on either side of the centerline for the purposes of parking/staging and to use existing spur routes for the purpose of accessing established campsites within 300 feet of the centerline of designated routes except in WSAs. This would allow for safe passage of vehicles on routes and continued access to many historic camping sites. These designations would continue to provide access within the majority of the RFO. Under this alternative, only 3 fewer miles of routes would be open to the public compared to Alternative N. It should be noted that route designations are implementation decisions, and the resulting transportation network could change over time. Impacts for general access using a road network would be negligible.

Impacts from Lands and Realty

The availability of approximately 13,400 acres for disposal could reduce the overall amount of BLM lands available to the public for access. Due to the small acreage involved, impacts would be minor and site specific. The development of wind or solar energy could adversely affect access and travel management if access were restricted into those areas or through voluntary displacement if significant development took place. Impacts would be site specific and dependent on future interest in this type of development.

Impacts from Special Designations

Wilderness Study Areas

The impacts would be similar to those described in Alternative N, except that OHV use within all 466,900 acres of the WSAs would be limited to designated routes. All 60 miles of inventoried ways within the WSAs would be designated as available for motorized use, in accordance with the IMP. This would be an increase of 18 miles of ways from the designations in Alternative N. This would slightly increase public access into these areas. Overall, impacts would be negligible to minor.

Wild and Scenic Rivers

No eligible river segments are recommended for suitability under this alternative, and no protective measures are proposed, resulting in no impact to travel management.

Areas of Critical Environmental Concern

There are no ACECs proposed for designation under this alternative, resulting in no impact to travel management.

Proposed RMP

Impacts from Special Status Species

The impacts would be similar to those described under Alternative A. Under the Proposed RMP, route restrictions are proposed with a total of 538 miles (11% of the total designated routes) of designated routes, an increase of 277 miles over Alternative A (Table 4-37). Management actions would limit OHV use to designated routes in all Greater sage-grouse habitats including breeding (leks), nesting, brood-rearing, and wintering, but would not include area closures. These restrictions would have site-specific impacts on travel and access in the RFO.

Table 4-37. Impacts from Special Status Species on Travel Management, by Alternative

	Alternative N	Alternative A	Proposed RMP	Alternative C	Alternative D
Miles of Restricted Routes	Subject to existing laws and regulations	249	538	591	591
Percent of the Total Designated Routes	-	0	11%	19%	19%
Increase in Miles Over Alternative A	-	0	+277	+342	+342

Impacts from Fish and Wildlife

Impacts from management strategies to avoid or reduce habitat fragmentation would be the same as described under Alternatives N and A. Management actions would limit OHV use to designated routes in 806,700 acres of deer and elk crucial winter range and close 4,500 acres; and limit OHV use to designated routes in bison crucial habitat but do not include area closures. Seasonal restrictions would be addressed on a case-by-case basis. Overall impacts would depend on the number of restricted miles necessary, but extensive limitations are not anticipated.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under the Proposed RMP, motorized use on the 12 non-WSA lands with wilderness characteristics 78,600 acres (4% of the RFO) would be limited to designated routes for the preservation, protection, and maintenance of wilderness characteristics. Therefore, there would be no impacts to motorized users from this management. However, in these non-WSA lands with wilderness characteristics, mechanized use would also be limited to designated routes. This would reduce mechanized access in these areas, resulting in minor impacts.

Impacts from Recreation

Decisions to maintain and improve the Piute, Great Western, and other motorized trail systems would benefit OHV users and maintain and improve access in these areas.

Five SRMAs, totaling 860,390 acres (40% of the RFO), are proposed under the Proposed RMP, an increase of 345,890 acres over Alternative A. In most cases, the proposed SRMA areas and acreages are different than in Alternative A. Management of these SRMAs could restrict public access in some SRMAs and would continue to enhance motorized use (specifically cross-country access) in other SRMAs.

The Dirty Devil SRMA (290,500 acres) would propose to close the canyons within the SRMA to OHV use, with the remainder of the area limited to designated routes. Impacts to travel management would be similar to Alternative N. The majority of the routes that would be closed is within current closed WSA acreage or areas closed by the OHV Management Plan for the Henry Mountains.

The Capitol Reef Gateway SRMA (12,800 acres) proposes to close the Fremont Gorge WSA and Fremont Gorge itself to OHV use, with the remainder of the area limited to designated routes. Impacts to travel management would be similar to Alternative N. The Fremont Gorge WSA is closed in both alternatives. Few route miles exist within the Fremont Gorge.

The Henry Mountains SRMA (532,600 acres) does not include specific management prescriptions for motorized use. It would be managed according to the OHV area designations in Chapter 2 of this PRMP/FEIS.

The overall impacts to travel management from the proposed Dirty Devil, Capitol Reef Gateway, and Henry Mountains SRMAs would range from negligible to minor.

The Factory Butte (24,400 acres) OHV Play Areas RMZ (8,500 acres) and Big Rocks (90 acres) SRMAs would continue to be managed as OHV open areas to provide a motorized recreational experience and to allow for additional support (signing, interpretation, and facilities) of these motorized activities as necessary. However, the total acreage of these SRMAs is significantly less than that proposed for support of OHV open areas in Alternative A (221,300 acres), resulting in substantially less open areas in the Proposed RMP. While fencing in the Factory Butte SRMA (Appendix 18) would affect cross-country travel, it would assist visitors in knowing where boundaries are located. Additionally, several user-developed access routes have been established off of Highway 24 into the Swing Arm City OHV Open Area. This presents a safety hazard, especially with the two access routes to the east, which are near a curve in the Highway. Access into the Swing Arm City OHV Open Area would be restricted to one upgraded entrance off of Highway 24. Although the additional user-developed routes would no longer be available for travel, developing one entrance that is properly marked would help alleviate the current safety hazard. Also, by upgrading the surface of the one access road to an all-weather gravel surface for a distance into the open area, visitors would be able to get completely clear of the highway before stopping, parking, unloading, etc. Overall impacts to cross-country access under this alternative would range from moderate to major.

Impacts from Travel Management

Under the Proposed RMP, 9,890 acres (less than 1% of the RFO) would be open to motorized cross-country vehicle travel. These OHV areas would be managed as designated open areas with a variety of riding opportunities: Mancos Shale hill climbs, trials motorcycle, rock crawling, and community play areas. However, reducing the open acreage from 77% in Alternative N to less than 1% in this alternative significantly reduces the opportunities for cross-country OHV use and some historical uses. As travel throughout the RFO increases, including demand for open OHV areas, this alternative may not sufficiently meet the needs for off-road access for OHVs and other casual uses. Open OHV areas may not be large enough to absorb the levels of use, resulting in conflicts between OHV users and safety concerns. Impacts to off-road travelers would be moderate to major.

This alternative would designate 1,908,210 acres (90% of the RFO) as limited to designated routes and trails, the largest acreage of all the alternatives. Of the total route miles, 3,739 miles would be designated as open in this alternative and 538 miles of routes would be designated with seasonal closures and/or size/width restrictions. The total designated route miles include 59.5 miles of inventoried ways within WSAs. There would be 345 miles of routes closed to motorized use. Motor vehicles would be allowed to pull off of a designated route up to 50 feet on either side of the centerline for the purposes of parking/staging and to use existing spur routes to access established campsites within 150 feet of the centerline of designated routes. This would allow for safe passage of vehicles on routes and continued access to many historic camping sites. In the long term, the significant reduction of open acres and miles of routes could increase the traffic on the remaining designated routes. This could increase the number of conflicts and safety concerns on certain heavily used routes. Impacts would range from minor to moderate.

There would be 209,900 acres (10% of the RFO) closed to OHV use under this alternative. The majority of these acres are within WSAs where few inventoried ways occur. The overall impacts would be negligible to minor.

Impacts from Lands and Realty

Impacts would be the same as those described under Alternative A.

Impacts from Special Designations

Wilderness Study Areas

The acres of WSAs designated as limited and closed to OHV use would be the same as Alternative N. Of the 60 miles of total inventoried ways within the WSAs, 45 miles would be designated as open for motorized use as long as use is non-impairing, in accordance with the IMP. This would be an increase of 3 miles of designated ways over Alternative N and a slight decrease from Alternative A. Overall, the impact to access and travel management would negligible to minor.

Wild and Scenic Rivers

Under the Proposed RMP, one river segment totaling 5 miles would be recommended as suitable for inclusion in the National Wild and Scenic River System. Management prescriptions would close this river segment to OHV use within one-quarter mile of the high water mark on each bank of the river.

Areas of Critical Environmental Concern

Under this alternative, two ACECs would be designated: North Caineville Mesa and Old Woman Front. Management prescriptions to protect the relevant and important values for these 2,530 acres would close the areas to OHV use. There are no routes identified within these areas, and there would be no impact to travel management.

Alternative C

Impacts from Special Status Species

The impacts would be similar to those described under the Proposed RMP since management actions would limit OHV use to designated routes in all Greater sage-grouse habitats including breeding (leks), nesting, brood-rearing, and wintering, but would not include area closures. Under this alternative, proposed route restrictions would increase to 591 miles (19% of the total designated routes), which is an increase of 342 miles over Alternative A and 108 miles more than in the Proposed RMP.

Impacts from Fish and Wildlife

Impacts from management strategies to avoid or reduce habitat fragmentation would be the same as described under the previous alternatives. Under this alternative 142,000 acres of deer and elk crucial winter range and 189,000 acres of crucial bison habitat would be closed to OHV use, 26% of the total closed acres under this alternative. These management decisions would reduce motorized access and result in site-specific, minor impacts.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness character on those lands outside of WSAs are proposed under this alternative, so no impacts to travel management would occur.

Impacts from Recreation

Four SRMAs, totaling 930,000 acres (44% of the RFO), are proposed, which would be slightly higher than under the Proposed RMP. However, under this alternative, all SRMAs could restrict public access and no SRMAs would be proposed to enhance motorized use (specifically cross-country access) because there are no areas open to cross-country motorized travel.

The Dirty Devil SRMA would be increased to 375,800 acres, 85,300 acres more than under the Proposed RMP. Proposed management prescriptions would close the WSR segments to OHV use except for the Poison Springs/North Hatch Canyon road corridor. Where the SRMA overlaps WSAs and the Dirty Devil ACEC, the travel management decisions for those areas would apply. The remainder of the SRMA would be limited to designated routes. Impacts to travel management and access from this proposed SRMA would be moderate.

Impacts from the proposed Capitol Reef Gateway SRMA (12,800 acres) would be similar to those discussed under the Proposed RMP. The area closed to OHV use would increase by including the VRM Class II areas, but few routes occur in these areas.

Impacts from the proposed Henry Mountains SRMA (533,900 acres) would be the same as discussed under the Proposed RMP.

Management decisions for the proposed Sevier Canyon SRMA (7,500 acres) would limit OHV use to designated routes. Impacts to travel management from this proposed SRMA would be negligible.

Impacts from Travel Management

Under Alternative C, vehicle travel would be allowed only on designated routes, with no areas open to motorized cross-country travel. All 1,636,400 acres previously open (Alternative N) would be limited to designated routes or closed. This would be a decrease of 9,390 acres open to OHV use as compared to the Proposed RMP. Traditional uses that take public land visitors off designated routes (e.g., wood products harvesting, wildlife viewing, dispersed camping and hunting), along with motorized adventure riding, would be greatly limited in this alternative. Impacts to off-road travelers would be moderate to major.

This alternative would designate 1,445,000 acres (68% of the RFO) as limited to designated routes and trails, fewer acres than in Alternatives A or the Proposed RMP. The remainder of the area (683,000 acres, 32% of the RFO) would be closed to motorized travel, including all WSAs. Of the total route miles, 2,601 miles would be designated as open in this alternative and 591 miles of routes would be designated with seasonal closures or size/width restrictions. There would be 1,188 miles of routes closed to motorized use, 984 more miles of closed routes than in the Proposed RMP. In the long term, allowing no open acreage for cross-country OHV travel and significantly reducing the miles of routes available for public uses could increase the traffic on those designated routes. Motor vehicles would be allowed to pull off of a designated route up to 25 feet of either side of the centerline for the purposes of parking/staging. Depending on the location and factors such as viewing distance along the road, 25 feet may not allow for vehicles to park and still safely allow for the passage of other vehicles on the road. Restricting camping with motorized access to designated campsites would limit access and possibly restrict use of some historic camp areas. This could increase the number of conflicts and safety concerns on certain heavily used routes. Impacts would range from moderate to major.

Impacts from Lands and Realty

Under this alternative, no lands would be available for FLPMA Section 203 sales, which would result in no reduction in the overall amount of BLM lands available to the public for access.

The development of wind or solar energy could adversely affect access and travel management if access were restricted into those areas or through voluntary displacement if significant development took place. Impacts would be site specific and dependent on future interest in this type of development.

Impacts from Special Designations

Wilderness Study Areas

In Alternative C, all WSAs and all of the 60 miles of inventoried routes within WSAs would be closed. Closing these routes would affect access by the public for recreational and trailhead access, as well as general use. Impacts would be most noticeable in locations where routes to existing trailheads, such as those accessing the Dirty Devil River and Horseshoe Canyon, would no longer be available for use by motorized vehicles. The impacts would be site specific and range from minor to moderate, depending on the length and destination of the route.

Wild and Scenic Rivers

Under Alternative C, all 12 eligible river segments, totaling 135 miles, would be recommended as suitable for inclusion in the National Wild and Scenic River System. Management prescriptions would close these river segments to OHV use within one-quarter mile of the high water mark on each bank of the river segment. The exception would be the Poison Spring road that crosses the Dirty Devil River, which would remain open for motorized travel. Many of the segments are remote and occur within WSAs. Only 35 miles of routes exist within the eligible river segments. Therefore, the overall impact to access and travel management would be minor.

Areas of Critical Environmental Concern

Under this alternative, all potential ACECs (16 areas totaling 886,810 acres, or 42% of the RFO) would be designated. Management prescriptions to protect the relevant and important values include closing or limiting the ACECs to OHV use.

Portions of the Badlands and Henry Mountains ACECs would be closed to OHV use by ACEC management prescriptions. Within the Badlands ACEC, the mesa tops would be closed to OHV use; within the Henry Mountains ACEC, No Man's Mesa would be closed to OHV use. All of the potential Old Woman Front ACEC would be closed to OHV use. However, these areas do not contain motorized routes, so there would be no impact.

All of the potential Rainbow Hills ACEC (4,000 acres), including 26 miles of routes, would be closed to OHV use by ACEC management prescriptions. Due to the number of routes within this relatively small area, this could result in site-specific, moderate impacts for access and travel management.

Alternative D

Impacts from Special Status Species

The impacts would be similar to those described under Alternative C. The total miles of designated routes would be lower under this alternative. The proposed miles of route restrictions would be 591 (19% of the total designated routes), which would be the same as in Alternative C.

Impacts from Fish and Wildlife

Impacts from management strategies to avoid or reduce habitat fragmentation would be the same as described under the previous alternatives, except that this alternative would have the most acreage closed for fish and wildlife protection. Under this alternative, 142,000 acres of deer and elk crucial winter range and 189,000 acres of crucial bison habitat would be closed to OHV use. These management decisions would greatly reduce motorized access and result in moderate impacts.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under this alternative, all non-WSA lands with wilderness characteristics (682,600 acres, 32% of the RFO) would be closed to OHV use for the protection of those values. Closures to motorized use would

increase by 472,200 acres over Alternative C due to this proposed management decision, greatly reducing motorized access and resulting in moderate impacts.

Impacts from Recreation

Seven SRMAs, totaling 1,358,100 acres (64% of the RFO) are proposed, which would be the most acreage of any of the alternatives and 20% higher than under Alternative C. Under this alternative, all SRMAs would restrict public access and no SRMAs would be proposed to enhance motorized use (specifically cross-country access) because there are no acres open to cross-country motorized travel.

The East Fork Sevier River SRMA (59,500 acres) would close non-WSA lands with wilderness characteristics to OHV use.

The San Rafael Swell SRMA (127,100 acres) would close the mesa tops and non-WSA lands with wilderness characteristics to OHV use.

The Dirty Devil SRMA would be increased to 383,900 acres, 8,100 acres more than under Alternative C, and would close WSAs and non-WSA lands with wilderness characteristics to OHV use.

The Capitol Reef Gateway SRMA would be increased to 168,800 acres, 156,000 acres more than under Alternative C, and would close the Fremont Gorge WSA, Fremont Gorge WSR corridor, and non-WSA lands with wilderness characteristics to OHV use.

The Henry Mountains SRMA would be decreased to 479,500 acres. Management actions would close the WSAs and non-WSA lands with wilderness characteristics to OHV use.

The Labyrinth Canyon SRMA (75,300 acres) would close WSAs and non-WSA lands with wilderness characteristics to OHV use.

The Little Rockies SRMA (64,000 acres) would be closed to OHV use for the protection of WSA and non-WSA lands with wilderness characteristics.

Managing 64% of the RFO as SRMAs emphasizing primitive and semi-primitive recreation with large areas closed to OHV use would impact travel management and all access into these areas. Some existing trailheads (e.g., Angel Trail East, Robbers Roost Spring, Larry's Canyon, and Horseshoe Canyon [Deadman's Trail]) would no longer be accessible by motorized vehicles. The overall impact to travel management would range from moderate to major under this alternative.

Impacts from Travel Management

The impacts of this alternative would be similar to Alternative C. Vehicle travel would be allowed only on designated routes, with no areas open to motorized cross-country travel. All 1,636,400 acres currently open (Alternative N) would either be limited to designated routes or closed. Alternative D proposes the most acreage to be closed, including all WSAs and non-WSAs with wilderness characteristics (1,155,200 acres, or 54% of the RFO). Alternative D would also designate the least miles of routes as open or open with restrictions and the most closed route miles. Of the total route miles, 2,493 miles would be designated as open, 550 miles would be designated with seasonal closures or size/width restrictions, and 1,242 miles of routes would be closed to motorized use. Restrictions on parking/staging and motorized access to campsites would be the same as Alternative C. The potential for traffic, accidents, and conflicts experienced by travelers on the designated routes would be greater than that experienced under the other alternatives due to the limited miles of routes open to the public. The decisions in this alternative could result in a major impact to travel and access within and across the RFO for the recreating public, permitted users, researchers, and federal and state agencies.

Impacts from Lands and Realty

Impacts would be the same as those described under Alternative C.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative C.

Wild and Scenic Rivers

Impacts would be the same as those described under Alternative C.

Areas of Critical Environmental Concern

Under this alternative, all potential ACECs (16 areas totaling 886,810 acres, or 42% of the RFO) would be designated. Management prescriptions to protect the relevant and important values include closing or limiting areas to OHV use.

As in Alternative C, the mesa tops in the Badlands ACEC, No Man's Mesa in the Henry Mountains ACEC, and all of the Old Woman Front and Rainbow Hills ACECs would be closed to OHV use. The impacts would be the same as discussed for Alternative C.

Under Alternative D, management prescriptions would also close portions of the Badlands, Bull Creek, Fremont Gorge/Cockscomb, Henry Mountains, Kingston Canyon, Little Rockies, Quitchupah, and Thousand Lakes Bench ACECs, and all of the Dirty Devil, Horseshoe Canyon, and Lower Muddy Creek ACECs that include non-WSA lands with wilderness characteristics. The overall impacts to travel management from closure of non-WSA lands were discussed above under the Impacts from Non-WSA Lands with Wilderness Characteristics section.

4.4.5 Lands and Realty

The following discussion highlights the primary differences between alternatives and their anticipated impacts on the lands and realty program. Included in the lands and realty program are land-tenure adjustments (e.g., sales, exchanges, acquisitions); withdrawals, classifications, and segregations; and ROWs and other land use authorizations (e.g., leases, easements, and permits). This section focuses on how other resources potentially impact the lands and realty program by limiting or preventing realty actions.

The purpose of the lands and realty program is to facilitate management of the RFO's lands and resources. The program adapts according to changing land management and resource needs and issues. As such, lands and realty program actions generally result in beneficial impacts within the RFO with regard to multiple use objectives. In addition, the presence of other resources could prevent lands and realty actions from being carried out and, thus, they are considered adverse impacts on the lands and realty program.

The only types of direct impacts to the lands and realty program occur when other resources prevent or make it considerably more difficult to complete a transaction. For example, mitigating measures to protect resource values required for a ROW substantially increases processing costs and timeframes required to complete the transaction and temporarily delays the transaction. Generally, there are no indirect impacts to the lands and realty program.

Methods and Assumptions

The analysis was based on the following assumptions:

- The BLM would continue to process land tenure adjustments.
- Lands identified for FLPMA Section 203 sale may be sold or otherwise disposed of within the life of the plan.
- Disposal of small, isolated parcels of public land would decrease the cost of public land administration in the RFO and enhance efficient management of remaining public lands.
- The disposal of small, isolated parcels would decrease conflicts between public land users and private landowners.
- Lands and interests in lands could be acquired from willing landowners by purchase, exchange, or donation.
- Non-federal land, interests in land (including access and conservation easements), and water rights would be considered for acquisition when they are within administratively designated areas or contain important resources (e.g., WSAs, ACECs, critical habitat, lands supporting listed species, riparian-wetland areas).
- Existing withdrawals would continue.
- The demand for communication sites and ROW corridors would increase within the life of this plan.
- ROW holders may maintain their use and access at their discretion consistent with the terms of their ROW grant.

Environmental Consequences

Impacts to lands and realty would likely result from actions proposed under the following resource programs:

- Visual Resources

- Special Status Species
- Fish and Wildlife
- Fire and Fuels Management
- Non-WSA Lands with Wilderness Characteristics
- Travel Management
- Lands and Realty
- Special Designations.

Other programs were determined to have little or no impact on lands and realty.

Alternative N: No Action

Impacts from Visual Resources

Implementing VRM guidelines would increase the design and siting requirements for ROWs and other land use authorizations and affect associated costs on new or amended ROWs. Such restrictions may also restrict placement and could possibly delay availability of energy supply (by restricting pipelines, transmission lines, and wind and solar projects) and could create dead zones or delay availability of communications service. Such requirements could require utility lines and communication sites to be installed in less desirable locations or areas with more restrictions on accessibility or construction. There would also be an increased potential that requests for new or amended and renewed ROWs at existing sites would be denied as available space decreases.

ROWs would not occur in VRM Class I areas and would generally not occur in Class II areas because of the requirements to preserve or retain the existing character of the landscape. Under this alternative, none of the lands managed by the RFO are classified as VRM Class I. ROWs and other land use authorizations proposed on the 529,500 acres (25% of the RFO) within VRM Class II areas would be redesigned, moved, or otherwise restricted.

Managing for VRM Classes III and IV would allow the greatest flexibility for ROWs and other land use authorizations. VRM Classes III and IV allow more changes to the landscape and are less restrictive of ground-disturbing activities. Under this alternative, 569,000 acres would be managed as VRM Class III and 1,029,500 acres would be managed as Class IV. Thus, the majority of the RFO (75%) would be available for siting of ROWs.

Impacts from Special Status Species

Land tenure adjustments would be affected by the management decision to generally retain all habitat for federally-listed and candidate species in federal ownership. The presence of SSS may preclude the issuance of some land use authorizations and place restrictions on others (such as timing restrictions on construction or other ground-disturbing activities, or siting restrictions to avoid habitat areas). For example, under this alternative, surface disturbing activities are prohibited near Greater sage-grouse leks from March 1 through July 15 and within sage grouse brooding/nesting habitat from April 1 through June 15.

Seasonal limitations within 1 mile of bald eagle nest sites, within one-half mile of bald eagle winter concentration areas, and year-round restrictions on ground-disturbing activities within one-half mile of bald eagle nest sites could limit access and could delay project construction of new ROWs or reconstruction of existing ROWs.

The reintroduction of endemic or non-endemic SSS may potentially impact lands and realty depending upon the species and the use restrictions or conservation measures applied.

Impacts from Fish and Wildlife

Proposed decisions for fish and wildlife could restrict some ROWs and other land use authorizations by location or season. In order to avoid or reduce habitat fragmentation, ROW applicants would be encouraged (or even required, in some locations) to collocate facilities. Seasonal or spatial restrictions for bison, mule deer, and elk could delay construction of new ROWs or reconstruction of existing ROWs. Prohibiting surface-disturbing activities from November 1 through May 15 (6½ months each year) could make it difficult to complete some projects. Where seasonal restrictions limit the time available to complete activities, relocation of surface facilities could be required. Impacts to issuance of ROWs would likely be minimal because areas in which habitat restrictions apply are likely not areas in which demand for ROWs is high.

Impacts from Fire and Fuels Management

Wildland fire use, appropriate management response, and prescribed fire suppression activities could potentially adversely impact ROWs (e.g., power lines and communication sites), facilities, and adjacent non-BLM lands; however, long-term impacts could be beneficial due to the reduction of high-severity fires. Post-fire rehabilitation improvements could affect adjacent non-BLM lands (e.g., reduced erosion and less chance of alien plant invasion). Impacts to lands and realty would be minor.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under this alternative, resulting in no additional restriction on lands and realty.

Impacts from Travel Management

Impacts to lands and realty from travel management would result from reduced access to the public lands, and, therefore, reduced opportunities for land use authorizations. Generally, the more area open to OHV use, the greater the opportunity for activities authorized under a land use permit or ROW. Under this alternative, 1,636,400 acres (77%) of the RFO would be open to motorized vehicles, allowing opportunities for these types of activities over a large portion of the RFO.

Motorized vehicles would be limited to existing, designated, and maintained routes on 277,600 acres (13%) of the RFO, which would limit opportunities for land use authorizations to areas along those designated routes if the activity required motorized vehicle access for construction, operation, or maintenance (unless administrative access was granted for such purposes). Under this alternative, 4,315 miles of routes in the RFO would be open to motorized use.

The remainder of the RFO (214,000 acres, or 10% of the RFO) would be closed to motorized vehicle use, which would result in restrictions on land use authorizations beyond the restrictions that already would occur as a result of avoidance or exclusion areas for land use authorizations. Land use authorizations that do not require motorized vehicle use (such as minimum impact filming activities) would not be affected.

Impacts from Lands and Realty

Under this alternative, 280 acres identified as available for FLPMA Section 203 sale in the existing land use plans would continue to be available pending site-specific environmental analysis. Inholdings within the wilderness study areas and four existing ACECs would be priorities for acquisition.

The purpose of designating corridors is to reduce or eliminate resource and land use conflicts. One major inhibitor to the timely review and approval of ROWs for a major energy facility is the effort involved in selecting a suitable route for the facility while minimizing the environmental impacts created by its construction, operation, and continued maintenance. This includes the requirement that suitable alternative routes be identified and reviewed at the same level of scrutiny as the preferred route. One way

to help alleviate this inhibitor and help streamline the authorization process is to identify and designate utility corridors in RMPs. If a corridor is designated as such in the plan, then it has already been determined to be the "preferred route" and other alternative routes need not be addressed. If the project proponent uses the designated corridor as the proposed route, then the proponent would only be required to do on-the-ground environmental studies to determine if the route is suitable for the construction of the project. This simplifies the permitting process and can save considerable time as well as costs.

This alternative designates no utility corridors. Therefore, the benefits described above to the lands and realty program would not be realized.

Impacts from Special Designations

Wilderness Study Areas

Continued management of WSAs under the IMP would limit surface-disturbing actions that could result in impairment of wilderness values. Thus, WSAs are exclusion areas for ROWs and are unavailable for land disposals. However, land use authorizations that would not impair wilderness values (such as minimum impact filming) could be authorized and. in fact. would provide the appropriate setting for these types of activities. Inholdings within the WSAs would be a priority for acquisition, consolidating federal land ownership and improving manageability of public lands in these areas.

Wild and Scenic Rivers

Management actions to protect the outstandingly remarkable values, free-flowing nature, and tentative classification of all eligible river segments affect the availability of these areas for lands and realty actions. As such, these river corridors (12 segments, 135 miles) would be managed as avoidance areas for ROWs, which could result in denying ROWs or requiring realignment of the proposed ROW around the avoidance area. These restrictions would increase the cost of construction or preclude authorization of the ROW altogether. However, because these areas are remote in location, impacts to lands and realty should be negligible.

Areas of Critical Environmental Concern

Management actions for protection of relevant and important values of ACECs affect the availability of these areas for lands and realty actions. Along with continuing the designations of Beaver Wash Canyon, North Caineville Mesa, and South Caineville Mesa ACECs, proposals under Alternative N would allow no uses that would cause irreparable damage to relevant and important values. As such, these ACECs (14,780 acres) would be managed as avoidance areas for ROWs. However, because these areas are small in extent and are remote in location, impacts to lands and realty should be negligible.

Land tenure adjustments would focus on acquisition of non-federal land within the ACECs. Over time, this would lead to a consolidated land pattern within these special designations, a benefit to other resource programs.

Alternative A

Impacts from Visual Resources

The types of impacts experienced under this alternative would be similar to those described under Alternative N. This alternative designates fewer areas as VRM Classes I and II (446,900 acres as VRM Class I, and 0 acres as VRM Class II). This alternative designates more acres as VRM Classes III and IV than any of the alternatives, which would provide the least restrictions on design and siting of ROWs and other land use authorizations.

Impacts from Special Status Species

Impacts would be similar to those described under Alternative N, except that there are fewer restricted areas under Alternative A. For example, surface-disturbing activities within sage-grouse brooding habitat would be restricted from April 1 through June 15 in Alternative N, but no restrictions apply in Alternative A. This would result in increased opportunities for land use authorizations under Alternative A. However, impacts to the lands and realty program would be minimal because areas in which habitat restrictions apply are likely not areas in which demand for ROWs is high. Land use authorizations that do not involve surface-disturbing activities would not be affected by these restrictions.

Impacts from Fish and Wildlife

Impacts would be similar to those described under Alternative N.

Impacts from Fire and Fuels Management

Impacts would be the same as those described under Alternative N.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under this alternative, resulting in no additional restrictions on lands and realty.

Impacts from Travel Management

The types of impacts that would be experienced as a result of travel management would be similar to those described under Alternative N. However, this alternative designates 449,000 acres (21%) of the RFO as open to motorized vehicles; motor vehicles would be limited to designated routes on 1,679,000 acres (79%) of the RFO; and 0 acres would be closed to motorized vehicle use. The amount of open areas, although greatly reduced as compared to Alternative N, would provide relatively unrestricted opportunities for land use authorizations.

The remainder of the RFO would have motorized/mechanized use limited to designated routes, which would limit opportunities for land use authorizations to areas along those designated routes if the activity required motorized vehicle access for construction, operation, or maintenance (unless administrative access was granted for such purposes). Under this alternative, 4,312 miles of routes in the RFO would be open to motorized use.

No areas would be closed to motorized/mechanized use, with no accompanying restrictions (at least from travel decisions) on land use authorizations.

Impacts from Lands and Realty

One hundred and eighteen parcels totaling 13,400 acres are identified as available for sale under FLPMA Section 203 and could be sold pending site-specific environmental analysis. These sales would improve the manageability of the public land estate by disposing of parcels isolated or difficult to manage and could provide opportunities for community expansion. Conversely, grazing land, open space, wildlife habitat, and land available for other public land uses would be lost. Inholdings within the wilderness study areas would be priorities for acquisition, consolidating federal land ownership and improving manageability of public lands in these areas.

Under this alternative, 25 utility corridors would be designated (Appendix 5). Of these, 12 would be one-half mile in width and the remaining 13 would be 800 feet in width. These corridors follow existing utility lines or highway corridors. This would minimize adverse environmental impacts and the proliferation of separate ROWs in these areas, as well as help streamline the process for the authorizing energy transmission facilities and other utility ROWs.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

No river segments are recommended as suitable WSRs under this alternative.

Areas of Critical Environmental Concern

No ACECs are proposed for designation under this alternative.

Proposed RMP

Impacts from Visual Resources

The types of impacts experienced under this alternative would be similar to those described under Alternative A, except that more acres would be designated as VRM Classes I and II (696,700 acres, or 33% of the RFO), and fewer areas as VRM Classes III and IV (1,431,300 acres). This would result in less area where ROWs and other land use authorizations could be sited, which could affect associated costs to the ROW/permit applicant by requiring relocation or changes in project design to meet the VRM class objectives. This could also restrict or delay availability of communications service if suitable sites cannot be found.

Impacts from Special Status Species

Impacts would be similar to those described under Alternative N, except that the Proposed RMP has more restrictions on surface disturbing activities in Greater sage-grouse habitat including oil and gas leasing subject to major constraints (NSO) within ½ mile of leks and prohibiting surface disturbing or otherwise disruptive activities within sage-grouse winter habitat from December 15 through March 14 (see Appendix 11 for exception, waivers, and modifications). However, because 97 percent of sage grouse winter habitat is within mule deer crucial habitat, which has a timing limitation on surface disturbing activities from December 15 through April 15, the sage grouse winter timing limitation would only result in surface disturbing restrictions on an additional 2,200 acres. The restrictions could limit access and could delay project construction of new ROWs or reconstruction of existing ROWs, or result in siting restrictions. Restrictions on surface disturbing activities within Greater sage-grouse habitat are greater under the Proposed RMP than under any of the other alternatives. However, impacts to the lands and realty program are expected to be minimal because sage-grouse habitats are not typically areas in which demand for ROWs is high. Land use authorizations that do not involve surface-disturbing activities would not be affected by these restrictions.

Impacts from Fish and Wildlife

Impacts would be similar to those described under Alternative N, except that there are more restricted areas under the Proposed RMP. For example, activities within crucial desert bighorn sheep habitat would be restricted from April 15 through June 15 in the Proposed RMP, but no restrictions on surface-disturbing activities within bighorn sheep habitat would apply in Alternative N. However, impacts to the lands and realty program would be minimal because areas in which habitat restrictions apply are likely not areas in which demand for ROWs is high. Land use authorizations that do not involve surface-disturbing activities would not be affected by these restrictions.

Impacts from Fire and Fuels Management

Impacts would be the same as those described under Alternative N.

Impacts from Non-WSA Lands with Wilderness Characteristics

Approximately 78,600 acres within the RFO would be managed to maintain non-WSA wilderness characteristics. In addition to managing these areas as ROW avoidance areas, they would not be available for disposal and would be designated as VRM Class II. Avoiding placement of ROWs and associated surface disturbance in order to protect the wilderness values in these areas could re-route pipelines, power lines, and other infrastructure that may be needed for mineral-related activities, community enhancement, or development of inholdings.

Within the Proposed RMP, the boundaries of the Red Desert and Notom Bench non-WSA lands managed to maintain wilderness characteristics have been adjusted to exclude the existing powerline rights-of-way, plus a 1,000 foot buffer for future use and expansion. The boundary of the Little Rockies non-WSA area has been off-set from the adjacent State Highway 276 right-of-way corridor. These adjustments would minimize potential impacts to future ROW corridors.

Impacts from Travel Management

The types of impacts that would be experienced as a result of travel management would be similar to those described under Alternative N. However, this alternative designates only 9,890 acres (less than 1% of the RFO) as open to cross-country motorized vehicle use. This could limit the opportunities for land use authorizations if the connected activity required cross-country travel (unless administrative access was granted for such purposes). In addition, motorized users seeking that type of recreational opportunity would be concentrated into that relatively small area, which could result in conflicts with the holder of the land use authorization.

This alternative would close 209,900 acres (10% of the RFO) to motorized use, which would eliminate all opportunities for land use authorizations requiring motorized vehicle access. The remainder of the RFO (1,908,210 acres) would have motorized/mechanized use limited to designated routes, which would limit opportunities for land use authorizations to areas along those designated routes if the activity required motorized vehicle access for construction, operation, or maintenance (unless administrative access was granted for such purposes). Under this alternative, 4,277 miles of routes in the RFO would be open to motorized use.

Impacts from Lands and Realty

One hundred and eighteen parcels totaling 13,400 acres are identified as available for sale under FLPMA Section 203 and could be sold pending site-specific environmental analysis (same as Alternative A). These sales would improve the manageability of the public land estate by disposing of parcels that are isolated or difficult to manage and could provide opportunities for community expansion. Conversely, grazing land, open space, wildlife habitat, and land available for other public land uses would be lost. Inholdings within WSAs, one suitable WSR corridor (Fremont River in Fremont Gorge), and two ACECs (North Caineville Mesa and Old Woman Front) would be priorities for acquisition, consolidating federal land ownership and improving manageability of public lands in these areas.

The same utility corridors designated under Alternative A would also be designated in the Proposed RMP, resulting in the same impacts.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Management actions to protect the outstandingly remarkable values, free-flowing nature, and tentative classification of all suitable river segments affect the availability of these areas for lands and realty actions. Under this alternative, one river corridor (5 miles) is recommended as suitable and would be managed as an avoidance area for ROWs, which could result in denying ROWs or requiring realignment of the proposed ROW around the avoidance area. These restrictions would increase the cost of construction or preclude authorization of the ROW altogether. However, because these areas are remote in location, impacts to lands and realty should be negligible.

Areas of Critical Environmental Concern

Impacts would be similar to those described under Alternative N, except that fewer areas would be designated as ACECs (two ACECs, totaling 2,530 acres). Thus, potential impacts on the lands and realty program (in the form of fewer ROW avoidance areas and fewer focus areas for acquisition of inholdings) would be reduced.

Alternative C

Impacts from Visual Resources

The types of impacts experienced under this alternative would be similar to those described under the Proposed RMP, except that fewer acres would be designated as VRM Classes III and IV (1,450,500 acres). This would result in less area where ROWs and other land use authorizations could be sited, which could affect associated costs to the ROW/permit applicant. This could also restrict or delay availability of communications service if suitable sites cannot be found.

Impacts from Special Status Species

Impacts would be similar to those described under the Proposed RMP.

Impacts from Fish and Wildlife

Impacts would be similar to those described under Alternative N, except that there are additional restrictions for protection of wildlife habitat areas under Alternative C. For example, OHV use on 142,000 acres of deer and elk crucial winter range and 189,000 acres of crucial bison habitat would be closed under this alternative. This could limit opportunities for land use authorizations that require motorized vehicle use for access. However, impacts to the lands and realty program should be minimal because areas in which habitat restrictions apply are likely not areas in which demand for ROWs is high. Land use authorizations that do not involve surface-disturbing activities would not be affected by these restrictions.

Impacts from Fire and Fuels Management

Impacts would be the same as those described under Alternative N.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under this alternative, resulting in no additional restrictions on lands and realty.

Impacts from Travel Management

The types of impacts experienced as a result of travel management would be similar to those described under the Proposed RMP. However, this alternative designates no areas as open to motorized vehicles. The lack of open areas would eliminate opportunities for land use authorizations if the connected activity required cross-country travel (unless administrative access was granted for such purposes).

This alternative would close 683,000 acres (32% of the RFO) to motorized use, which would eliminate all opportunities for land use authorizations requiring motorized vehicle access. The remainder of the RFO (1,445,000 acres) would have motorized/mechanized use limited to designated routes, which would limit opportunities for land use authorizations to areas along those designated routes if the activity required motorized vehicle access for construction, operation, or maintenance (unless administrative access was granted for such purposes). Under this alternative, 3,192 miles of routes in the RFO would be open to motorized use.

Impacts from Lands and Realty

No lands are identified as available for sale under FLPMA Section 203; hence, there would be no beneficial or adverse impacts to the federal land ownership pattern. Inholdings within the WSAs, all suitable WSR corridors, and all ACECs would be priorities for acquisition, which would consolidate the ownership pattern in these special designations.

The same utility corridors designated under Alternative A would also be designated in the Proposed RMP, resulting in the same impacts.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Impacts would the same as those described under Alternative N.

Areas of Critical Environmental Concern

The types of impacts experienced from the designation of ACECs would be similar to those described under Alternative N, except that significantly more areas would be designated as ACECs (16 areas, totaling 886,810 acres). Thus, potential impacts on the lands and realty program (in the form of many more ROW avoidance areas and more focus areas for acquisition of inholdings) would be substantially greater.

Alternative D

Impacts from Visual Resources

The types of impacts experienced under this alternative would be similar to those described under Alternative C, except that even fewer acres would be designated as VRM Classes III and IV (931,700 acres). This alternative would be the most restrictive on where ROWs and other land use authorizations could be sited and would be most likely to affect associated costs to the ROW/permit applicant, and most likely to delay or restrict availability of communications service in some areas.

Impacts from Special Status Species

Impacts would be the same as those described under the Proposed RMP.

Impacts from Fish and Wildlife

Impacts would be similar to those described under Alternative C, except that there are additional restrictions for protection of wildlife habitat areas under Alternative D. For example, OHV use on 258,000 acres of deer and elk crucial winter range and 207,000 acres of crucial bison habitat would be closed under this alternative. This alternative could limit opportunities for land use authorizations that require motorized vehicle use for access—the most of any alternative. However, impacts to the lands and

realty program should still be minimal because areas in which habitat restrictions apply are likely not areas in which demand for ROWs is high. Land use authorizations that do not involve surface-disturbing activities would not be affected by these restrictions.

Impacts from Fire and Fuels Management

Impacts would be the same as those described under Alternative N.

Impacts from Non-WSA Lands with Wilderness Characteristics

Approximately 682,600 acres within the RFO would be managed to preserve non-WSA wilderness characteristics. In addition to managing these areas as ROW exclusion areas, they would not be available for disposal and would be designated as VRM Class I. Prohibiting ROWs and associated surface disturbance in order to protect the wilderness values in these areas would preclude pipelines, power lines, and other infrastructure that may be needed for mineral-related activities, community enhancement, or development of inholdings.

In order to protect wilderness characteristics values, lands identified for disposal in the Notom Bench and Dogwater Creek non-WSA lands with wilderness characteristics would be retained in federal ownership. This would preclude the augmentation of contiguous private ranchlands in these areas.

All 682,600 acres of non-WSA lands with wilderness characteristics would be proposed for mineral withdrawal under this alternative. This would preclude extraction of all locatable minerals, including uranium and vanadium, from these lands, subject to valid existing rights.

Protecting wilderness characteristics lands would preclude designation of the full widths of ROW corridors along Highway 24 within Wild Horse Mesa, Red Desert, Fremont Gorge, and Notom Bench non-WSA lands with wilderness characteristics. In addition, corridor widths would be limited to outside non-WSA lands along State Highways 95, 276, and 62 within Little Rockies, Fiddle Butte, Rocky Ford, Phonolite Hill, and Kingston Ridge non-WSA lands. Narrowing the corridors could preclude some future ROWs, especially large electrical lines, because lines would have to be sited too close together, which could result in sparking and other electrical interference.

Impacts from Travel Management

The types of impacts experienced as a result of travel management would be similar to those described under Alternative C. Similar to Alternative C, this alternative designates no areas as open to motorized vehicles, which would eliminate opportunities for land use authorizations if the connected activity required cross-country travel (unless administrative access was granted for such purposes).

This alternative would close significantly more (1,155,200 acres, or 32%) of the RFO to motorized use, which would eliminate all opportunities for land use authorizations requiring motorized vehicle access. The remainder of the RFO (972,800 acres) would have motorized/mechanized use limited to designated routes, which would limit opportunities for land use authorizations to areas along those designated routes if the activity required motorized vehicle access for construction, operation, or maintenance (unless administrative access was granted for such purposes). Under this alternative, 3,043 miles of routes in the RFO would be open to motorized use. This alternative would provide the least opportunity for land use authorizations requiring motorized vehicle access.

Impacts from Lands and Realty

No lands are identified as available for sale under FLPMA Section 203; hence, there would be no beneficial or adverse impacts to the federal land ownership pattern. Inholdings within non-WSA lands

with wilderness characteristics areas, WSAs, suitable WSR corridors, and ACECs would be priorities for acquisition, which would consolidate the ownership pattern in these areas.

Under this alternative, the same utility corridors designated under Alternative A would also be designated in the Proposed RMP, except that widths for four of the corridors (along State Highways 95, 276, and 62) would be narrower to avoid non-WSA lands. As described above (in the Non-WSA Lands with Wilderness Characteristics section), narrowing the corridors could preclude some future ROWs, especially large electrical lines, because lines would have to be sited too close together. Impacts from designating the other 21 corridors would be the same as described under Alternative A.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Impacts would be the same as those described under Alternative C.

Areas of Critical Environmental Concern

Impacts would be the same as those described under Alternative C.

4.4.6 Minerals and Energy

4.4.6.1 Leasable Minerals

Oil and Gas

Oil and gas resources within the RFO would be available for leasing under the alternatives, as depicted in Table 4-38. Alternative A would make the most land (79% of the lands managed by the RFO) available for oil and gas leasing; Alternative D, the least (45%). Likewise, Alternative A would impose the fewest restrictions on exploration and development; Alternative D would be the most restrictive. Maps 2-34, 2-35, 2-36, 2-37, and 2-38 show the leasing categories by alternative.

Table 4-38. Oil and Gas Leasing Categories, Acres, and Percentage of RFO

Leasing Categories		Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Open	Standard Lease Terms	1,236,500 ac 58%	860,600 ac 40%	608,700 ac 29%	491,900 ac 23%	290,200 ac 14%
	Controlled Surface Use or Timing Stipulations	409,200 ac 19%	820,500 ac 39%	917,500 ac 43%	901,100 ac 42%	634,000 ac 30%
Open	No Surface Occupancy	22,600 ac 1%	0 ac 0%	154,500 ac 7%	148,700 ac 7%	43,300 ac 2%
	Total Open	1,668,300 ac 78%	1,681,100 ac 79%	1,680,700 ac 79%	1,541,700 ac 72%	967,500 ac 46%
Closed to Leasing		459,700 ac 22%	446,900 ac 21%	447,300 ac 21%	586,300 ac 28%	1,160,500 ac 54%

Mineral potential for oil and gas is assessed in the *Mineral Potential Report for Sanpete, Sevier, Wayne, and Garfield Counties, Richfield Field Office* (BLM 2005b), which is available for review on the planning project website at http://www.blm.gov/ut/st/en/fo/richfield/planning.html. In addition, a Reasonably Foreseeable Development (RFD) scenario was developed for oil and gas activities in the planning area in conformance with IM 2004-089 (Appendix 12). The RFD is a prediction of the number of wells to be drilled, acreage of surface disturbance, and a rating of activity (development potential), based on the assumptions and analysis in the Mineral Potential Report. Table 4-39 is a summary of the RFD. The RFD does not differentiate between activities on public versus non-public lands. In the RFD, the planning area is divided into four areas, based on USGS oil and gas plays and predicted activity within the plays.

Table 4-39. Reasonably Foreseeable Development for Oil and Gas

Defined Area	General Area	Number of Wells Predicted	Surface Disturbance Geophysical (Acres)	Surface Disturbance Wells (Acres)	Oil and Gas Occurrence Potential*	Development Potential*
Areas 1 & 2	Piute, Wayne, and Garfield counties	45 wells	240 ac	540 ac	Wayne and Garfield Counties and Eastern Piute	Low

Defined Area	General Area	Number of Wells Predicted	Surface Disturbance Geophysical (Acres)	Surface Disturbance Wells (Acres)	Oil and Gas Occurrence Potential*	Development Potential*
					County Are High Potential; Western Piute County and the Antimony Area Are Moderate	
Area 3	Eastern Sevier and Sanpete Counties—Wasatch Plateau Area	49 wells	360 ac	1,100 ac	High	Moderate
Area 4	Western Sevier and Sanpete Counties—Sevier and Sanpete Valleys	360 wells	4,500 ac	1,440 ac	High**	High
Total		**454 wells**	**5,100 ac**	**3,080 ac**		

* Oil and gas occurrence potential and development potential are based on the *Mineral Potential Report* and RFD, respectively. In the RFD, development potential is defined as the relative likelihood of activity, not development per se. The *Mineral Potential Report* stated that development is likely in Areas 3 and 4 and unlikely in Areas 1 and 2. The RFD modified the development potential, based on published information available after the completion of the *Mineral Potential Report*.
**Area 4 includes the Sevier Frontal Thrust play and other plays. Given the overlap of the plays, the potential is based on the thrust play.

Most oil and gas activity is predicted in the western part of the planning area in Area 4 in association with the Sevier Frontal play, also referred to as the Central Utah Thrust play, which generally encompasses the Sevier and Sanpete Valleys and adjacent ranges. Area 3 is located in the vicinity of the Wasatch Plateau and includes conventional gas as well as coalbed methane gas. Areas 1 and 2 include the southern parts of the planning area in Piute, Wayne, and eastern Garfield counties, as well as several plays associated with the Paradox Basin province and the Permo-Triassic Unconformity play.

Methods and Assumptions

The analysis for impacts to oil and gas assumes:

- Oil and gas activity—exploration, drilling, and production, if paying quantities of oil or gas are discovered—would be managed according to applicable law, federal regulations, and onshore orders and would be managed to mitigate impacts to other resources according to BMPs appropriate to the site/location.
- The RFD is a reasonable prediction of oil and gas activity for the planning horizon.

Environmental Consequences

Impacts to oil and gas activity would most likely result from actions proposed for the management of the following resources:

- Soil Resources and Water Resources
- Cultural Resources
- Visual Resources
- Special Status Species
- Fish and Wildlife
- Non-WSA Lands with Wilderness Characteristics
- Recreation
- Lands and Realty
- Special Designations.

Other programs were determined to have little or no impact on oil and gas leasing and development.

Alternative N: No Action

Impacts from Soil Resources and Water Resources

Managing public lands to protect soil and water would have an impact on oil and gas activity as mitigations would be developed that would modify proposed oil and gas operations when an application, such as a Notice of Intent (NOI) for Geophysical Exploration or Application for Permit to Drill (APD), is received by the BLM. Most mitigation would be required based on the federal regulations, the standard lease terms, and best management practices. Oil and gas operations would be restricted by a major leasing constraint on lands with steep slopes, canyon walls, or muddy and wet conditions, and where watersheds may be impaired. These areas are specifically:

- Moroni Slopes, Blue Hills, and Dirty Devil River Canyons (no occupancy or other surface disturbances where grades of slopes are greater than 50%)
- Dirty Devil River canyons (no occupancy within the canyon)
- Municipal water supplies (no occupancy or other surface disturbance)
- Live water (no occupancy or other surface disturbance within 500 feet).

The slope restriction would have an adverse impact on exploration and development by disallowing occupancy for drilling and surface facilities. Vertical drilling is preferred over directional, as vertical wells are less expensive to drill and are more likely to be successful. The above areas are specified by legal description and are protected by a lease stipulation, which has provisions for exceptions, waivers, or modifications in some areas.

Impacts from Cultural Resources

Managing public lands to protect cultural resources would impact oil and gas activity as mitigations or restrictions would be developed that would modify proposed oil and gas operations when an application, such as an NOI for Geophysical Exploration or APD, is received by the BLM. Archaeological sites and sites eligible for the National Register would be avoided, and mitigation would be required as consistent with the federal laws and regulations and the standard lease terms. Modifying proposed exploration and development would have adverse impacts by delaying the time required for approval.

Oil and gas operations would be subject to NSO in the following areas:

- Bull Creek Archaeological District
- Susan Rockshelter Archaeological Site
- Fish Cove Archaeological Site.

NSO would preclude drilling or other facilities on the above sites and would have an adverse impact on exploration and development. If the proposed subsurface target is beneath one of the above sites, the drilling would need to be by directional methods, which would increase drilling costs and would decrease the likelihood of successful exploration.

Cultural resources within four existing ACECs—Beaver Wash Canyon, North Caineville Mesa, South Caineville Mesa, and the Gilbert Badlands—would be protected by additional management prescriptions for those designated areas. The existing ACECs are open to leasing subject to major constraints (NSO), except for Beaver Wash Canyon, which is closed to leasing.

Impacts from Visual Resources

Managing visual resources on public lands would have an impact on oil and gas activity as mitigations would be developed that would modify proposed oil and gas operations when an application, such as an NOI for Geophysical Exploration or APD, is received by the BLM. Based on the VRM class, mitigations would be developed consistent with the guidelines of the VRM classes and the federal laws and regulations and standard lease terms. The VRM guidelines for the RFO are VRM Class I, 0 acres, which is 0% of public land within the RFO; VRM Class II, 529,000 acres, which is 25%; VRM Class III, 569,000 acres, which is 27%; and VRM Class IV, 1,029,500 acres, which is 48%. The WSAs (446,900 acres) would be managed as VRM Class I, although they may be designated in other VRM classes. An area designated VRM Class II would allow for minimal change to its landscape character, thus oil and gas activity would be very restricted, or activities may need to be redesigned or moved depending on the proposed oil and gas operation. This restriction would preclude drilling on the surface and preclude surface facilities, unless these meet the VRM objective. The restriction could require drilling to be by directional methods from adjacent land, which would increase cost and would decrease the likelihood of success of wildcat wells. Areas designated VRM Class IV would allow for major modifications of the landscape, thus oil and gas activity would be minimally impacted compared to VRM Class II.

The following areas are designated as NSO:

- Utah Highway 24 in places in the vicinity of Torrey
- Utah Highway 95 at North Wash
- Notom Road east of Capitol Reef National Park.

The land subject to NSO is within 1,320 feet of the centerline of the roadway unless the oil and gas activity is not visible from the highway or road. NSO would preclude drilling or other facilities within the above highway corridors and would have an adverse impact on exploration and development. If a proposed subsurface target is within one of the above corridors, the drilling would need to be by directional methods from adjacent land, which would increase drilling costs and would decrease the likelihood of successful exploration.

Impacts from Special Status Species

All oil and gas federal actions would be subject to the requirements of the Endangered Species Act of 1973, as amended. Any action potentially affecting any listed threatened or endangered species would require the appropriate level of Section 7 consultation with (USFWS). Necessary mitigation, such as timing and avoidance, would be implemented to protect listed plant and animal species, subject to applicable federal laws, regulations, and lease terms. Applicable lease notices for subject SSS that may be present would be attached to a lease when authorized. The mapped sage-grouse strutting (leks) and nesting (brooding) areas within the Parker Mountain planning area would be subject to a seasonal restriction for oil and gas exploration and development. Surface disturbing activities would be prohibited near Greater sage-grouse leks from March 1 through July 15 and within sage grouse brooding/nesting

habitat from April 1 through June 15. Distance or timing restrictions for SSS would have an adverse impact on oil and gas operations. Requirements for SSS inventories may result in relocating proposed well sites or other surface facilities and delays in permitting oil and gas operations. Seasonal restrictions would have adverse impacts to oil and gas exploration and development if a proposed deep well could not be feasibly drilled and completed within the open season, precluding drilling deep exploration targets. Distance restrictions would require directional drilling instead of vertical drilling, which would increase drilling cost, and directional drilling in wildcat areas would have less likelihood of success. Because the Parker Mountain planning area, where Greater sage-grouse leks are located, has low oil and gas development potential, impacts resulting from sage-grouse stipulations are expected to be low. There are currently only four sage-grouse leks in this area although that number could increase in the future.

Impacts from Fish and Wildlife

Management of wildlife habitat would have an impact to oil and gas exploration and development through imposing restrictions for when oil and gas activity would be allowed. Crucial winter range for deer, elk, antelope, and bison have seasonal restrictions for when exploration and development may occur. In addition, pronghorn (antelope) kidding range and bison yearlong range are seasonally restricted for oil and gas activity. These timing restrictions affect when oil and gas exploration and development would be allowed. Seasonal restrictions would have adverse impacts to oil and gas exploration and development, as a company would need to schedule activities during the open season. Equipment, such as drill rigs and work crews, would not necessarily be available during the open season. Delays in permitting proposed operations and contracting necessary equipment and crews would increase costs for exploration and development. On deeper wells, the seasonal restrictions would preclude drilling deep targets when the well could not be feasibly drilled and completed within the open season. Habitat for these animals that is open to leasing subject to minor constraints, such as timing restriction, would be open or closed as shown in Table 4-40 below.

Table 4-40. Oil and Gas Leasing Stipulations within Crucial Wildlife Habitat—Alternative N

			Deer	Pronghorn	Bison	Elk
Open	Standard Lease Terms	Acres	225,400 ac	23,600 ac	89,400 ac	82,300 ac
		% Habitat	40%	23%	36%	39%
Open	Timing or Controlled Surface Use Restrictions	Acres	243,800 ac	73,300 ac	44,600 ac	124,900 ac
		% Habitat	43%	71%	18%	59%
	No Surface Occupancy	Acres	8,500 ac	5,300 ac	500 ac	4,900 ac
		% Habitat	1%	5%	<1%	2%
Closed		Acres	91,500 ac	500 ac	116,400 ac	100 ac
		% Habitat	16%	1%	46%	<1%

The CSU, NSO, and Closed designations are not necessarily imposed for the protection of wildlife but because the wildlife habitat is enclosed within those areas. This alternative would have the least impact on oil and gas exploration, as the land subject to habitat restrictions or closure would be the least under this alternative.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under this alternative, no actions to maintain wilderness characteristics on lands outside of WSAs are proposed, resulting in no impact to oil and gas exploration and development.

Impacts from Recreation

Under this alternative, no SRMAs would be established. The following areas would be subject to NSO:

- Jet Basin
- Pink Cliffs
- Star Springs
- Fremont River Gorge
- Otter Creek.

The NSO designation reduces the opportunity for oil and gas exploration and development because drilling and surface facilities would be disallowed. If subsurface targets beneath the above sites were drilled, then directional drilling would be necessary. Drilling directional wells is more expensive than drilling vertical wells, and directional drilling is less likely to be successful in wildcat areas.

The following areas would be closed to leasing:

- Little Rockies
- Beaver Wash Canyon.

In closed areas, oil and gas resources would not be explored and would not be available for development.

Impacts from Lands and Realty

The following areas would be open to leasing subject to major constraints (NSO):

- Cemeteries
- Landfills, existing and closed
- Lands managed under Recreation and Public Purpose Act lease.

The following areas would be closed to leasing:

- Incorporated municipalities.

Limiting the above areas subject to NSO or closure to leasing would affect oil and gas exploration and development. The NSO areas would reduce the opportunity for oil and gas exploration and development because drilling from the NSO-restricted surface and other surface facilities would be disallowed. If subsurface targets beneath the above sites were drilled, then directional drilling would be necessary. Drilling directional wells would be more expensive than drilling vertical wells, and directional drilling would be less likely to be successful than vertical drilling in wildcat areas. In closed areas, undiscovered oil and gas resources would not be explored and would not be available for development.

Impacts from Special Designations

Wilderness Study Areas

WSAs, encompassing 446,900 acres, would be closed to leasing for oil and gas exploration and development. The WSAs are within the low activity area (low development potential area) in the RFD scenario for oil and gas, where the prediction is for one well per year or 45 wells for the planning horizon.

However, none of those wells were predicted for WSAs, as the RFD does not apply to lands that are closed to leasing by law, which is the case for WSAs. Closing WSAs to leasing is required by law; therefore, the decisions in this PRMP/FEIS would not impact oil and gas exploration and development within WSAs.

Wild and Scenic Rivers

Managing 12 eligible WSR corridors totaling 135 miles would affect oil and gas exploration and development by limiting surface-disturbing activities within the river corridors. No decision would be made under this alternative for suitability. There are 98 miles (73% of the total miles) of the eligible river segments that are within WSAs, which are closed to leasing. The management prescription for the 37 miles of river segments outside of WSAs would vary in management from open subject to standard terms to closed to leasing. The eligible rivers are within areas with high potential for the occurrence of oil and gas with a predicted low activity level (development potential), except Quitchupah Creek, which has a predicted moderate activity level. The protected corridor for WSRs, where designated as such, is one-quarter mile of the high water mark on each bank of the river segment. The management of WSRs outside of WSAs would have adverse impacts to oil and gas exploration and development. The NSO segments would require directional drilling and no surface facilities, which would increase cost and would decrease the likelihood of successful exploration. In the segments closed to leasing, oil and gas resources would not be explored and would not be available for development.

Areas of Critical Environmental Concern

The four existing ACECs would affect oil and gas exploration and development. At Beaver Wash, 4,800 acres are closed to leasing. At Gilbert Badlands, 3,680 acres, and at North and South Caineville Mesas, 2,200 and 4,100 acres, respectively, are subject to NSO. At Beaver Wash, which would be closed to leasing, oil and gas resources would not be explored and would not be available for development. At Gilbert Badlands and the Caineville Mesas ACECs, oil and gas exploration and development would be impacted by requiring the relocation of well sites and surface facilities. The relocation of well sites would require directional drilling. Such impacts would increase the cost of exploration and would affect the likelihood of successful exploration.

Alternative A

Impacts from Soil Resources and Water Resources

Managing public lands to protect soil and water would have an impact on oil and gas activity as mitigations would be developed that would modify proposed oil and gas operations when an application, such as an NOI for Geophysical Exploration or APD, is received by the BLM. Most mitigation would be required based on the federal regulations, the standard lease terms, and best management practices. In order to protect soil and water, controlled surface use would establish the following minor constraints:

- Exploration and development would not be allowed within 330 feet of live water
- Exploration and development would not be allowed within 330 feet of a spring
- Exploration and development would not be allowed within zones of hydric soils
- Exploration and development within areas of high potential for wind erosion, as identified by the Natural Resources Conservation Service (NRCS), would require plans for soil stabilization or signing
- Exploration and development on slope gradients that are 30% or greater would require appropriate design in the surface use plan of operations.

The above CSU requirements would have provisions for exceptions, modifications, and waivers as addressed in Appendix 11, but they could require redesign or result in the inability to develop oil and gas in some locations.

Slopes that have a gradient that is greater than 30% would be subject to CSU. This moderate constraint would be subject to exception or modification, based upon adequate design for the control or reduction of erosion.

Managing for the above soil and water conditions would add costs and delays to permitting oil and gas exploration activities, although most of the above-stated conditions would require a relocation of less than 660 feet. Where the relocation is more than 660 feet for a proposed drilling site, directional drilling would be required instead of vertical, which would increase costs and decrease the likelihood of successful exploration.

Impacts from Cultural Resources

Impacts to oil and gas activity from the management of cultural resources would be similar to those described under Alternative N, except designated areas with specific protection for cultural resources (e.g., ACECs with culturally relevant and important values) are not proposed in this alternative. Oil and gas exploration and development would be mitigated by requirements imposed for site-specific applications as consistent with the federal laws and regulations and the standard lease terms. Mitigation would require avoidance of cultural resources and such mitigation would impact oil and gas exploration and development through an increased cost for cultural resource inventories and relocation of proposed wells and surface facilities.

Impacts from Visual Resources

The types of impacts experienced from visual resource management would be similar to, but slightly less than, those described under Alternative N, due to the following changes to the designated VRM classes: VRM Class I, 446,900 acres (21% of the RFO); VRM Class II, 0 acres (0%); VRM Class III, 392,800 acres (18%); and VRM Class IV, 1,288,300 acres (61%). VRM Class I would impact oil and gas exploration as surface disturbance would be disallowed, unless appropriate mitigation met the objective of this VRM class; however, the VRM Class I lands are also WSAs that are closed to oil and gas leasing. Thus VRM Class I designations, in effect, do not impact oil and gas. VRM Classes III and IV designated lands would have minimal impact on oil and gas, although there could be some delays and added costs to develop mitigations, such as use of appropriate paint colors, building facilities in a manner that blends better with the landscape, and other minor changes in operations. The impacts to oil and gas activity from visual resources would be the least in Alternative A.

Impacts from Special Status Species

The types of impacts experienced from management of SSS would be similar to those described under Alternative N, except a one-quarter mile seasonal buffer (March 15 through June 1) for no surface disturbance or permanent structure would be imposed around sage-grouse leks. In this alternative, there would not be a timing restriction for brooding (nesting) areas imposed as a lease stipulation, thus any timing or distance restriction would be imposed at the time of an application for exploration and development, based on applicable federal laws and regulations and the standard lease terms. Requiring the one-quarter mile seasonal buffer would result in delaying development activities or relocating wells or facilities and could result in directional drilling to a subsurface target. Completing species inventories, selecting relocated sites, and directional drilling would increase delays in permitting and the costs of exploration and development, and directional drilling would decrease the likelihood of successful exploration. Seasonal restrictions would have adverse impacts to oil and gas exploration and development when a proposed deep well could not be feasibly drilled and completed within the open season,

precluding drilling deep exploration targets. Because the Parker Mountain planning area, where sage-grouse leks are located, has low oil and gas development potential, impacts resulting from sage-grouse stipulations are expected to be low. There are currently only four sage-grouse leks in this area although that number could increase in the future. This alternative would be the least restrictive for oil and gas exploration and development and would thus result in the least impacts to those activities.

Impacts from Fish and Wildlife

Under this alternative, there would be no special stipulations for oil and gas leasing. However, mitigation may still be applied for wildlife crucial habitats at the time of exploration and development, and mitigation for desert bighorn sheep would also be included under this alternative. Although the CSU, NSO, and closed acreage within Table 4-41 below are not necessarily imposed for the protection of wildlife, wildlife habitat is enclosed within those areas. The requirement of mitigation for wildlife species, if necessary, would most likely occur for the acres in the CSU category, which is the most CSU acres of any of the alternatives, and could result in impacts to oil and gas exploration and development. Seasonal restrictions would have adverse impacts to oil and gas exploration and development, as a company would need to schedule activities during the open season. Equipment, such as drill rigs and work crews would not necessarily be available during the open season. Delays in permitting proposed operations and contracting necessary equipment and crews would increase costs for exploration and development. On deeper wells, seasonal restrictions would preclude drilling deep targets, when the well could not be feasibly drilled and completed within the open season.

Table 4-41. Oil and Gas Leasing Stipulations within Crucial Wildlife Habitat—Alternative A

			Deer	Pronghorn	Bison	Bighorn	Elk
Open	Standard Lease Terms	Acres	400 ac	0 ac	200 ac	8,700 ac	100 ac
		% Habitat	<1%	0%	<1%	4%	<1%
	Timing or Controlled Surface Use Restrictions	Acres	477,300 ac	102,700 ac	134,300 ac	121,200 ac	212,100 ac
		% Habitat	84%	100%	54%	53%	100%
	No Surface Occupancy	Acres	0 ac	0 ac	0 ac	0 ac	0 ac
		% Habitat	0%	0%	0%	0%	0%
Closed		Acres	91,500 ac	0 ac	116,400 ac	97,400 ac	0 ac
		% Habitat	16%	0%	46%	43%	0%

Impacts from Non-WSA Lands with Wilderness Characteristics

Impacts would be the same as for Alternative N.

Impacts from Recreation

Under this alternative, five SRMAs would be established: Dirty Devil/Robbers Roost, Big Rocks, Sahara Sands, Otter Creek, and Factory Butte. Only Dirty Devil/Robbers Roost would be specifically managed for semi-primitive and primitive recreation. However, other than the portion of this SRMA within designated WSAs, the lands would be subject to standard lease terms and minor constraints for oil and

gas activity. Thus, the SRMAs would generally not impose stricter restrictions on oil and gas exploration and development.

Impacts from Lands and Realty

Impacts would be the same as described under Alternative N.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as described under Alternative N.

Wild and Scenic Rivers

Under this alternative, no eligible river segments would be recommended as suitable for wild and scenic designations. There would be no impact to oil and gas activity.

Areas of Critical Environmental Concern

No ACECs would be designated, and the four existing ACECs in Alternative N would no longer be designated as such. There would be no impacts to oil and gas from ACEC designations. Relevant and important values for the potential ACECs would be protected by applicable federal laws and regulations and the standard lease terms.

Proposed RMP

Impacts from Soil and Water

The impacts would be the same as those described under Alternative A.

Impacts from Cultural Resources

Impacts would be similar to those described under Alternative N, except designated areas with specific protection for cultural resources are not proposed in this alternative. Thus, no impacts associated with those restrictions would occur. Oil and gas exploration and development would be mitigated by requirements imposed at the time of review of site-specific applications as consistent with federal laws and regulations and the standard lease terms. Mitigation, if required, would include avoidance of cultural resources and such mitigation would impact oil and gas exploration and development through an increased cost for cultural resource inventories and relocation of proposed wells and surface facilities.

Two ACECs would be designated and the management prescription for those two areas would provide additional protection for cultural resources. These ACECs would be open to leasing subject to major constraints (NSO), which could make development of oil and gas unfeasible. These ACECs are:

- North Caineville Mesa
- Old Woman Front.

NSO would require directional drilling and no surface facilities, which would increase cost and would decrease the likelihood of successful exploration, as directional drilling is more expensive and less successful for exploration than vertical drilling.

Impacts from Visual Resources

The types of impacts experienced as a result of visual resource management would be the same as those described under Alternative N, except the designated VRM classes are changed as follows: VRM Class I, 446,900 acres (21% of the RFO); VRM Class II, 249,800 acres (12%); VRM Class III, 393,100 acres

(18%); and VRM Class IV, 1,038,200 acres (49%). VRM Classes I and II would impact oil and gas exploration, as surface disturbance would be disallowed, unless appropriate mitigation met the objective of these VRM classes. The VRM Class I designated lands are also WSAs that are closed to the leasing of oil and gas; thus VRM Class I designations, in effect, do not impact oil and gas. VRM Class II would preclude drilling on the surface and preclude surface facilities, unless it meets the VRM objective, and the restriction could require drilling to be by directional methods from adjacent land, which would increase cost and would decrease the likelihood of success of wildcat wells. VRM Classes III and IV designated lands would have minimal impact on oil and gas, although there could be some delays and added costs to develop mitigations, such as appropriate paint colors, building facilities in a manner that blends better with the landscape, and other minor changes in operations. This alternative has more VRM Classes I and II acres than Alternatives N or A, which would result in more restrictions to oil and gas activities.

Impacts from Special Status Species

The types of impacts experienced as a result of SSS management would be similar to those described under Alternative N, except that the Proposed RMP has greater restrictions on surface disturbing activities within Greater sage-grouse habitat. These restrictions include managing the area as open to oil and gas leasing subject to major constraints (NSO) within ½ mile of Greater sage-grouse leks and prohibiting surface disturbing or otherwise disruptive activities within 2 miles of a lek from March 15 through July 15, and within sage-grouse winter habitat from December 15 through March 14 (see Appendix 11 for exceptions, waivers, and modifications). However, because 97 percent of sage grouse winter habitat is within mule deer crucial habitat, which under the Proposed RMP has a timing limitation on surface disturbing activities from December 15 through April 15, the sage grouse winter timing limitation would only result in surface disturbing restrictions on an additional 2,200 acres. The NSO and the 2-mile buffer would require relocating wells or facilities at a greater distance than in Alternatives N and A, and could require directional drilling to a subsurface target. Completing species inventories, selecting relocated sites, and directional drilling would increase delays in permitting and the costs of exploration and development, and the greater distance for directional drilling would further decrease the likelihood of successful exploration. Seasonal restrictions would have adverse impacts to oil and gas exploration and development when a proposed deep well could not be feasibly drilled and completed within the open season, precluding drilling deep exploration targets. The winter timing limitation is not expected to affect oil and gas development since access to this winter habitat is limited. Because Parker Mountain, where sage-grouse leks are located, has low oil and gas development potential, impacts resulting from sage-grouse stipulations to protect breeding and brood-rearing habitat are expected to be low. There are currently only four sage-grouse leks on BLM land on Parker Mountain although that number could increase in the future.

Impacts from Fish and Wildlife

The impacts to oil and gas exploration and development from wildlife management would be similar to Alternative N, except the acreage of habitat under each open or closed designation changes, and habitat has been added for desert bighorn sheep which would impose restrictions on oil and gas exploration and development (Table 4-42). Exceptions, waivers and modifications to the seasonal restrictions (Appendix 11) in some cases would allow development activities to occur. Maps 3-5, 3-6, and 3-7 show crucial wildlife habitat for the alternatives. Seasonal restrictions would have adverse impacts to oil and gas exploration and development, as a company would need to schedule activities during the open season. Equipment, such as drill rigs and work crews, would not necessarily be available during the open season. Delays in permitting proposed operations and delays in contracting necessary equipment and crews would increase costs for exploration and development. On deeper wells, seasonal restrictions would preclude drilling deep targets, when the well could not be feasibly drilled and completed within the open season. Designated NSO areas would require directional drilling and no surface facilities, which would increase

cost and would decrease the likelihood of successful exploration. In the areas closed to leasing, oil and gas resources would not be explored and would not be available for development.

Leasing stipulations within crucial wildlife habitat are shown in Table 4-42 below:

Table 4-42. Oil and Gas Leasing Stipulations within Crucial Wildlife Habitat—Proposed RMP

			Deer	Pronghorn	Bison	Bighorn	Elk
Open	Standard Lease Terms	Acres	0 ac	0 ac	0 ac	0 ac	0 ac
		% Habitat	0%	0%	0%	0%	0%
	Timing or Controlled Surface Use Restrictions	Acres	689,400 ac	204,000 ac	120,000 ac	86,700 ac	263,900 ac
		% Habitat	87%	98%	46%	38%	99%
	No Surface Occupancy	Acres	36,500 ac	4,700 ac	16,000 ac	43,200 ac	2,500 ac
		% Habitat	5%	2%	6%	19%	1%
Closed		Acres	68,600 ac	0 ac	122,600 ac	97,500 ac	450 ac
		% Habitat	9%	0%	47%	43%	0%

Impacts from Non-WSA Lands with Wilderness Characteristics

Under the Proposed RMP, a total of 78,600 acres of non-WSA lands with wilderness characteristics would be managed to protect, preserve, and maintain the naturalness and outstanding opportunities for solitude and primitive recreation within these areas. The 12 non-WSA lands with wilderness characteristics would require NSO stipulations that could limit exploration and development of oil and gas resources. These non-WSA lands with wilderness characteristics encompass approximately 4% of the acreage of public lands in the RFO and are located in the eastern part of the RFO.

The planning area has been divided into four geographic areas, defined by USGS plays and assessment units. These are (1) the eastern portion of Wayne and Garfield counties (generally east of R. 12 E.), which is underlain by true Paradox Basin plays (USGS-2101, USGS-2102, USGS-2103, and USGS-2105); (2) the southern part of the planning area, as defined by the Permo-Triassic Unconformity Play (USGS-2106); (3) the Wasatch Plateau, defined by the Cretaceous Sandstone Play (USGS-2107), but also including CBNG in the Ferron, Emery, and Blackhawk coals; and (4) the area from the eastern boundary of the Sevier Frontal Zone Play (USGS-1907) to the western boundary of the planning area.

All of the non-WSA land with wilderness characteristics managed to maintain their wilderness characteristics (approximately 78,600 acres) would be in the low activity RFD area, Areas 1 and 2 combined. No non-WSA lands with wilderness characteristics would be managed to specifically maintain those characteristics within the moderate or high activity RFD areas, Areas 3 and 4 respectively. Although only three wells per year are predicted in RFD Areas 1 and 2 during the plan life (45 in the low activity areas), the restrictions on leasing could affect the opportunity to explore for oil and gas resources and to develop any resources that may be discovered.

Impacts from Recreation

Under this alternative, five SRMAs would be established—Henry Mountains, Dirty Devil/Robbers Roost, Capitol Reef Gateway, Factory Butte, and Big Rocks—which would result in greater impacts to oil and gas than under Alternatives N and A. The Henry Mountains, Dirty Devil/Robbers Roost, and Capitol Reef Gateway SRMAs would provide opportunities for primitive and semi-primitive motorized and non-

motorized recreation. The portion of the Dirty Devil/Robbers Roost SRMA with Class A scenery, outside of WSAs, would be subject to NSO. These SRMAs are within a low activity RFD area (Areas 1 and 2 combined) that is predicted to have 3 wells per year or 45 wells during the plan life. The NSO designation would reduce the opportunity for exploration and development by requiring no surface disturbance within those designated areas and would require directional drilling and no surface facilities, which would increase cost and would decrease the likelihood of successful exploration.

The Factory Butte and Big Rocks SRMAs would provide opportunities for cross-country OHV use. Providing opportunities for OHV recreation would not preclude oil and gas exploration and development, although there could be delays in permitting any proposal for drilling or other surface facilities and requirements to relocate such.

The NSO area within the Dirty Devil/Robbers Roost SRMA, in part, overlaps existing oil and gas leases. These leases have been pending conversion to combined hydrocarbon leases since 1984, and the drafting of an EIS for tar sand leasing under the Energy Policy Act of 2005 is in progress by the BLM. These pending leases have pre-existing rights to the use of the surface for exploration and development. Issues related to permitting wells in areas with NSO would delay approval and would impose stricter environmental standards than currently addressed under the lease terms of the pending leases.

Impacts from Lands and Realty

Impacts would be the same as described under Alternative N.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as described under Alternative N.

Wild and Scenic Rivers

One eligible segment would be recommended for suitability with a tentative classification of wild. The Fremont Gorge of the Fremont River would be closed to leasing Given that the corridor would be one-quarter mile from the high water mark on each bank of the Fremont River, oil and gas activity would be precluded from the Fremont Gorge. The Proposed RMP would result in greater impacts to oil and gas than Alternative A but less than Alternatives N, C, and D.

Areas of Critical Environmental Concern

North Caineville Mesa would remain a designated ACEC (2,200 acres), and Old Woman Front ACEC (330 acres) would be designated. Both would restrict oil and gas activity through an NSO constraint that would require directional drilling and no surface facilities, which would increase cost and would decrease the likelihood of successful exploration. This alternative would result in greater impacts to oil and gas than Alternative A but less than Alternatives N, C, and D.

Alternative C

Impacts from Soil Resources and Water Resources

The types of impacts would be the same as Alternative A, except the buffer around live water and springs would increase to 660 feet.

Impacts from Cultural Resources

Management of cultural resources would impact oil and gas activity the same as Alternative N, including Bull Creek Archaeological District for the protection for cultural resources but not the Susan Rockshelter site. Oil and gas exploration and development would be mitigated by requirements imposed at time of

review of site-specific applications as consistent with the federal laws and regulations and the standard lease terms. Mitigation, if required, would include avoidance of cultural resources, and such mitigation would impact oil and gas exploration and development through an increased cost for cultural resource inventories and relocation of proposed wells and surface facilities.

Sixteen ACECs would be designated and the management prescription for these areas would provide additional protection for cultural resources. Those ACECs are:

- Badlands (includes North and South Caineville Mesas and Gilbert Badlands)
- Bull Creek Archaeological District
- Dirty Devil (includes Beaver Wash Canyon)
- Fremont Gorge/Cockscomb
- Henry Mountains (includes No Man's Mesa)
- Horseshoe Canyon
- Kingston Canyon
- Little Rockies
- Lower Muddy Creek
- Old Woman Front
- Parker Mountain
- Quitchupah
- Rainbow Hills
- Sevier Canyon
- Thousand Lakes Bench
- Special Status Species.

Impacts to oil and gas exploration and development from the designation of these ACECs are addressed under that section.

Impacts from Visual Resources

The types of impacts experienced as a result of visual resource management would be the same as described under Alternative N. The designated VRM classes are changed as follows: VRM Class I, 446,900 acres (21% of the RFO); VRM Class II, 230,600 acres (11%); VRM Class III, 509,400 acres (24%); and VRM Class IV, 941,400 acres (44%). VRM Classes I and II would impact oil and gas exploration, as surface disturbance would be disallowed unless appropriate mitigation met the objective of these VRM classes. The VRM Class I designated lands are also WSAs that are closed to the leasing of oil and gas; thus VRM Class I designations, in effect, do not impact oil and gas. VRM Class II would preclude drilling on the surface and preclude surface facilities, unless they meet the VRM objective, and the restriction would require drilling to be by directional methods from adjacent land, which would increase cost and would decrease the likelihood of success of wildcat wells. VRM Classes III and IV designated lands would have minimal impact on oil and gas, although there could be some delays and added costs to develop mitigations, such as appropriate paint colors, building facilities in a manner that blends better with the landscape, and other minor changes in operations. The acres within VRM Classes I and II that would result in the greatest restrictions to oil and gas activities are similar to the acreages in the Proposed RMP.

Impacts from Special Status Species

The types of impacts experienced as a result of SSS management would be similar to those described under the Proposed RMP, although Alternative C has fewer restrictions on surface disturbing activities in

sage grouse habitat. Completing species inventories, selecting relocated sites, and directional drilling which may be required to protect SSS, would increase delays in permitting and the costs of exploration and development, and the greater distance for directional drilling would further decrease the likelihood of successful exploration. Seasonal restrictions would have adverse impacts to oil and gas exploration and development when a proposed deep well could not be feasibly drilled and completed within the open season, precluding drilling deep exploration targets. Because Parker Mountain, where sage-grouse leks are located, has low oil and gas development potential, impacts resulting from sage-grouse stipulations are expected to be low. There are currently only four sage-grouse leks on BLM land on Parker Mountain although that number could increase in the future.

Impacts from Fish and Wildlife

Impacts would be similar to those described under the Proposed RMP. The habitat acres open to leasing with restrictions would be reduced to 73% of the mule deer habitat, 34% of bison habitat, 32% of Desert bighorn sheep habitat, and 95% of the elk habitat. The habitat acres designated as NSO and closed to oil and gas leasing would increase, varying from 0-67% depending on the species, resulting in a greater impact to oil and gas exploration and development over the Proposed RMP. Seasonal restrictions would have adverse impacts to oil and gas exploration and development, as a company would need to schedule activities during the open season. Equipment, such as drill rigs and work crews, would not necessarily be available during the open season. Delays in permitting proposed operations and contracting necessary equipment and crews would increase costs for exploration and development. On deeper wells, seasonal restrictions would preclude drilling deep targets when the well could not be feasibly drilled and completed within the open season. Designated NSO areas would require directional drilling and no surface facilities, which would increase costs and would decrease the likelihood of successful exploration. In the areas closed to leasing, oil and gas resources would not be explored and would not be available for development.

Leasing stipulations within crucial wildlife habitat are shown in Table 4-43 below:

Table 4-43. Oil and Gas Leasing Stipulations within Crucial Wildlife Habitat—Alternative C

			Deer	Pronghorn	Bison	Bighorn	Elk
Open	Standard Lease Terms	Acres	100 ac	0 ac	0 ac	3,400 ac	100 ac
		% Habitat	<1%	0%	0%	1%	<1%
	Timing or Controlled Surface Use Restrictions	Acres	412,800 ac	102,700 ac	84,400 ac	71,700 ac	201,000 ac
		% Habitat	73%	100%	34%	32%	95%
	No Surface Occupancy	Acres	31,200 ac	0 ac	15,800 ac	23,200 ac	10,500 ac
		% Habitat	5%	0%	6%	10%	5%
Closed		Acres	125,100 ac	0 ac	150,700 ac	129,000 ac	600 ac
		% Habitat	22%	0%	60%	57%	<1%

Impacts from Non-WSA Lands with Wilderness Characteristics

Impacts would be the same as described under Alternative N.

Impacts from Recreation

Under this alternative, four SRMAs would be established: The Henry Mountains, Capitol Reef Gateway, Dirty Devil/Robbers Roost, and Sevier Canyon. In the Henry Mountains SRMA, Class A scenery would be closed to leasing and areas within the viewshed of Capitol Reef National Park would be NSO; in the Dirty Devil/Robbers Roost SRMA, Class A scenery would be NSO or closed to leasing; in the Capitol Reef Gateway SRMA, the Fremont Gorge would be NSO; and in the Sevier Canyon SRMA, the Highway 89 corridor within the bottom of the canyon would be NSO. The portion of these SRMAs that are designated as NSO or closed to leasing, outside of WSAs, is within a low activity RFD area (Areas 1 and 2 combined) that is predicted to have three wells per year or 45 wells during the plan life. The NSO designation would reduce the opportunity for exploration and development by requiring no surface disturbance within those designated areas that would require directional drilling, resulting in increased costs and decreased likelihood of successful exploration. The areas closed to leasing would preclude any opportunities for oil and gas exploration and development. This alternative would result in greater impacts to oil and gas from recreation than Alternatives N, A, and the Proposed RMP.

The NSO and closed areas within the Dirty Devil/Robbers Roost SRMA, in part, overlaps existing oil and gas leases. These leases have been pending conversion to combined hydrocarbon leases since 1984, and the drafting of an EIS for tar sand leasing under the Energy Policy Act of 2005 is in progress by the BLM. These pending leases have pre-existing rights to the use of the surface for exploration and development. Issues related to permitting wells in areas with NSO would delay approval and would impose stricter environmental standards than currently addressed under the lease terms of the pending leases. The closure to leasing would be in conflict with the terms of the pending leases.

Impacts from Lands and Realty

Impacts would be the same as described under Alternative N.

Impacts from Special Designations

Impacts from Wilderness Study Areas

Impacts would be the same as described under Alternative N.

Wild and Scenic Rivers

Under this alternative, 12 eligible river segments would be recommended as suitable as WSRs, resulting in greater impacts to oil and gas than Alternatives N, A, and the Proposed RMP. All 12 of the segments would be closed to leasing, which would preclude any oil and gas activity, including any development of oil and gas resources.

Areas of Critical Environmental Concern

Sixteen ACECs encompassing approximately 886,810 acres would be designated. The specific relevant and important values and management prescriptions would vary by ACEC. Major constraints and areas closed to leasing would impact oil and gas activity, as the ACECs overlap lands that have a high potential for oil and gas with a predicted low activity level (development potential). In this alternative, ACEC management prescriptions would result in 516,199 acres being closed to leasing, 73,511 acres being subject to NSO, and 297,100 acres being open with standard lease terms, seasonal restrictions, or controlled surface use. Closure to leasing would preclude any oil and gas exploration and development of such resources. NSO designations would require directional drilling and no surface facilities, which would increase cost and would decrease the likelihood of successful exploration. Relocation of a well may eliminate a reasonable chance of success, by moving the well site too far from the drilling target.

Approximately 882,300 acres of the ACECs would be in the low activity RFD area, Areas 1 and 2 combined. Although only three wells per year are predicted (45 for the plan life), the designation of ACECs with major constraints and closure to leasing would affect the opportunity to explore for oil and gas resources and to develop any resources that may be discovered. In addition, existing leases overlap, in part, ACECs in the vicinity of the Dirty Devil River, Awapa Plateau (Parker Mountain), Kingston Canyon, and Marysvale Canyon (Sevier Canyon). The existing leases in the vicinity of the Dirty Devil River are leases that have been pending conversion to a combined hydrocarbon lease since 1984 and the current, ongoing drafting of an EIS for tar sand leasing under the Energy Policy Act of 2005. The Sevier Canyon ACEC is almost totally leased at this time and would be subject to valid existing rights. An attempt to impose NSO on a pre-existing lease or an attempt to revoke a pre-existing lease could lead to litigation.

RFD Area 3 would contain only 510 acres of ACECs. The opportunity for oil and gas exploration would be minimally impacted by the ACEC designations.

RFD Area 4 would be impacted by the management decision for NSO at the Rainbow Hills ACEC that encompasses 4,000 acres. The ACEC is presently encompassed by authorized oil and gas leases, and the producing oil field in this RFD area overlaps this ACEC. The existing leases are valid existing rights to the ACEC designation, and those leases are not subject to NSO. An attempt to impose NSO on a pre-existing lease or an attempt to revoke a pre-existing lease could lead to litigation. Although directional drilling has been used as a BMP at the Covenant field, NSO, if followed, would decrease opportunities for exploration and development in the lands designated as an ACEC.

Alternative D

Impacts from Soil Resources and Water Resources

The types of impacts would be similar to those described under Alternative A, except the buffer around live water and springs would increase to 660 feet.

Impacts from Cultural Resources

Impacts would be the same as described under Alternative C.

Impacts from Visual Resources

The types of impacts experienced as a result of visual resource management would be the same as described under Alternative N, except the designated VRM classes are changed as follows: VRM Class I, 1,129,600 acres (53% of the RFO); VRM Class II, 67,700 acres (3%); VRM Class III, 355,100 acres (17%); and VRM Class IV, 576,600 acres (27%). The impacts to oil and gas activity from visual resources would be the greatest in this alternative. VRM Classes I and II would impact oil and gas exploration, as surface disturbance would be disallowed unless appropriate mitigation met the objective of these VRM classes. The VRM Class I designated lands include WSAs, which are closed to the leasing of oil and gas. However, under this alternative, approximately 700,000 additional acres would be designated as VRM Class I, which would disallow any change to the landscape character. VRM Class II would preclude drilling on the surface and surface facilities, unless they meet the VRM objective, and the restriction would require drilling to be by directional methods from adjacent land, which would increase cost and would decrease the likelihood of success of wildcat wells. Relocation of a well, depending on the distance, may move the well site too far from the drilling target to have a reasonable chance of success. This alternative contains the most VRM Classes I and II acres, resulting in the greatest impacts to oil and gas exploration and development. VRM Classes III and IV designated lands would have minimal impact on oil and gas, although there could be some delays and added costs to develop mitigations, such as appropriate paint colors, building facilities in manner that blends better with the landscape, and other minor changes in operations.

Impacts from Special Status Species

Impacts would be the same as described under Alternative C.

Impacts from Fish and Wildlife

Impacts would be similar to those described under the Proposed RMP, except that the habitat acres open to leasing with restrictions would be reduced to 53% of the deer habitat, 12% of bison habitat, 2% of bighorn sheep habitat, and less than 1% of elk habitat. The habitat acres closed to oil and gas leasing would increase, varying from 0-94% depending on species. Alternative D would result in the most acres closed and the greatest impact to oil and gas exploration and development of all the alternatives. Leasing stipulations within crucial wildlife habitat are shown in Table 4-44 below.

Table 4-44. Oil and Gas Leasing Stipulations within Crucial Wildlife Habitat—Alternative D

			Deer	Pronghorn	Bison	Bighorn	Elk
Open	Standard Lease Terms	Acres	100 ac	0 ac	0 ac	1,100 ac	100 ac
		% Habitat	<1%	0%	0%	<1%	<1%
	Timing or Controlled Surface Use Restrictions	Acres	300,000 ac	102,700 ac	30,500 ac	5,500 ac	172,700 ac
		% Habitat	53%	100%	12%	2%	81%
	No Surface Occupancy	Acres	15,500 ac	0 ac	4,700 ac	6,900 ac	10,500 ac
		% Habitat	3%	0%	2%	3%	5%
Closed		Acres	253,600 ac	0 ac	215,700 ac	213,800 ac	28,900 ac
		% Habitat	44%	0%	86%	94%	14%

Impacts from Non-WSA Lands with Wilderness Characteristics

Under this alternative, a total of 682,600 acres of non-WSA lands with wilderness characteristics would be managed to protect the naturalness and outstanding opportunities for solitude and primitive recreation within these areas. All non-WSA lands with wilderness characteristics would be closed to leasing, which would preclude exploration and development of oil and gas resources. The non-WSA lands with wilderness characteristics encompass approximately 33% of the acreage of public lands in the RFO and are mostly located in the eastern part of the RFO.

Most of the non-WSA land with wilderness characteristics (approximately 667,360 acres) would be in the low activity RFD area, Areas 1 and 2 combined, and approximately 94% of the non-WSA lands with wilderness characteristics would be concentrated in the general geographic area of the Henry Mountains, Awapa Plateau, and the canyon lands of the Colorado Plateau. Approximately 19,240 acres are within the moderate activity RFD area, Area 3. Non-WSA lands with wilderness characteristics are not identified within the high activity RFD area, Area 4. Although only three wells per year are predicted in the low and moderate activity RFD areas during the plan life (45 or 49 total in the low or moderate activity areas, respectively), the closure to leasing would affect the opportunity to explore for oil and gas resources and to develop any resources that may be present. Managing the non-WSA lands as closed to oil and gas leasing could reduce the opportunity to discover oil and gas resources in 33% of the RFO.

In addition, non-WSA lands with wilderness characteristics, in part, encompass existing federal oil and gas leases at Dirty Devil/French Springs, Flat Tops, and Wild Horse Mesa. The Flat Tops area is mostly leased for oil and gas. These leases have pre-existing rights to the use of the surface for exploration and development. However, there would be issues related to location of wells and surface facilities in areas with wilderness characteristics that could delay approval and would impose stricter environmental standards than currently addressed under the lease terms of these pre-existing leases. An attempt to impose NSO on a pre-existing lease or an attempt to revoke a pre-existing lease could lead to litigation.

In addition, the non-WSA lands in the eastern part of the Dirty Devil/French Springs area encompass authorized oil and gas leases that are within the Tar Sands Triangle Special Tar Sands Area (STSA). These leases have been pending conversion to combined hydrocarbon leases since 1984, and BLM is currently drafting an EIS for tar sand leasing under the Energy Policy Act of 2005. These pending leases have pre-existing rights to the use of the surface for exploration and development. Issues related to the location of wells and surface facilities in areas with wilderness characteristics could delay approval and would impose stricter environmental standards than currently addressed under the lease terms of the pending leases.

Impacts from Recreation

Under this alternative, seven SRMAs would be established—Henry Mountains, Dirty Devil, Capitol Reef Gateway, East Fork Sevier River, San Rafael Swell, Little Rockies and Labyrinth Canyon—resulting in the greatest potential for impacts to oil and gas of any of the alternatives. The Henry Mountains, Capitol Reef Gateway, Dirty Devil/Robbers Roost, Little Rockies, San Rafael Swell, and Labyrinth Canyon SRMAs would provide opportunities for primitive and semi-primitive motorized and non-motorized recreation; the East Fork Sevier River SRMA would be for primitive and semi-primitive and roaded natural recreation. Most of the acreage in each of these SRMAs, except the East Fork Sevier River, would be closed to leasing. There would be areas open subject to NSO, minor constraints, and standard lease terms. The portion of these SRMAs that are designated as NSO or closed to leasing, outside of WSAs, is within a low activity RFD area (Areas 1 and 2 combined) that is predicted to have three wells per year or 45 wells during the plan life. The NSO designation would reduce the opportunity for exploration and development by requiring no surface disturbance within those designated areas and would require directional drilling and no surface facilities, which would increase cost and would decrease the likelihood of successful exploration. The areas closed to leasing would preclude any opportunities for oil and gas exploration and development.

The NSO and closed areas within the Dirty Devil/Robbers Roost SRMA, in part, overlap existing oil and gas leases. These leases have been pending conversion to combined hydrocarbon leases since 1984, and BLM is currently drafting an EIS for tar sand leasing under the Energy Policy Act of 2005. These pending leases have pre-existing rights to the use of the surface for exploration and development. Issues related to the location of wells and surface facilities in areas with NSO and closed to leasing would delay approval and would impose stricter environmental standards than currently addressed under the lease terms of the pending leases. The closure to leasing would be in conflict with the terms of the pending leases. An attempt to impose NSO on a pre-existing lease or an attempt to revoke a pre-existing lease could lead to litigation.

Impacts from Lands and Realty

Impacts to oil and gas would be the same as for Alternative N.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as described under Alternative N.

Wild and Scenic Rivers

Impacts would be the same as described under Alternative C.

Areas of Critical Environmental Concern

Impacts would be similar to those described under Alternative C, except that additional acres within the ACECs (33% of the RFO) would be closed to oil and gas leasing for the protection of non-WSA lands with wilderness characteristics (discussed in detail for that resource). This alternative would result in the greatest impacts to oil and gas.

Energy Policy and Conservation Act (EPCA) Evaluation by Alternative

The environmental consequences of proposed decisions on oil and gas resources were determined according to Energy Policy and Conservation Act guidance, per IM 2003-233.

In the EPCA, Congress required federal agencies to estimate oil and gas resources in five oil and gas provinces in the western United States and assess impediments to development. Two of the provinces, the Greater Paradox Basin and the Green River Basin, overlap the lands managed by the RFO.

The results of the EPCA analysis relative to the lands managed by the RFO are displayed below. Oil and gas resource data (volumetric data on the amounts of undiscovered oil and gas resources within the EPCA basins within the lands managed by the RFO) are shown for all alternatives, and data on leasing stipulations that would be imposed under the alternatives are shown for Alternative A, the Proposed RMP, and Alternative C. These estimates are mathematical projections, based on geologic and production parameters, and broad-based, regional assumptions.

Alternative N. Based on the 2003 EPCA report, the estimated oil and gas resources in each oil and gas leasing designation are summarized in Table 4-45.

Table 4-45. Technically Recoverable, Undiscovered Resources in Designated Open and Closed Areas—Alternative N

Oil and Gas Leasing Designation	Area		Total Liquids[1]		Total Natural Gas[2]	
	Acres	Square Miles	Barrels per Square Mile[3]	Million Barrels	Cubic Feet per Square Mile[4]	Billion Cubic Feet of Gas
Open Subject to No Surface Occupancy	22,600	36	0–20,000	0–1	0–500,000,000	0–18
Closed	459,700	719	0–20,000	0–14	0–500,000,000	0–359

1. Includes oil, natural gas liquids, and liquids associated with natural gas reservoirs.
2. Includes associated dissolved and non-associated natural gas.
3. Estimate from U.S. Department of the Interior (USDI), U.S. Department of Agriculture (USDA), U.S. Department of Energy (USDOE) 2003, p. 2–15.
4. Estimate from USDI, USDA, USDOE 2003, p. 2–20.

The land managed by the RFO is predominantly rated as high potential for oil and gas and subordinately as moderate potential with different confidence ratings. (Refer to the *Mineral Potential Report* [BLM 2005b].) In addition, activity related to oil and gas has been forecast in an RFD scenario (Appendix 12). In the RFD, the western part of the lands managed by the RFO in the vicinity of the Sevier and Sanpete Valleys is most likely to see oil and gas development related to the Sevier Frontal play (also referred to as

the Central Utah Thrust play), and this part of the land managed by the RFO is predominantly open to leasing with standard lease terms or a seasonal stipulation for wildlife critical habitat. The timing stipulations for wildlife habitat could impact proposed operations by altering the timing of exploration; however, the stipulation would not disallow most exploration.

Most of the public lands open to oil and gas leasing subject to NSO or closed to leasing are in the eastern part of the lands managed by the RFO. Allowing NSO or closing areas to leasing would have greater impacts to exploration and development than standard lease terms or controlled surface use or timing stipulations. Exploration would be precluded in the closed areas and could be precluded in the areas with NSO. At this time, oil and gas development is not foreseen in the eastern part of the RFO; however, in any wildcat area, when oil or gas are discovered in paying quantities, a forecast for exploration can quickly change from exploration to development.

Alternative A. Based on the 2003 EPCA report, the estimated oil and gas resources in each oil and gas leasing designation are summarized in Table 4-46 and on Map 4-1.

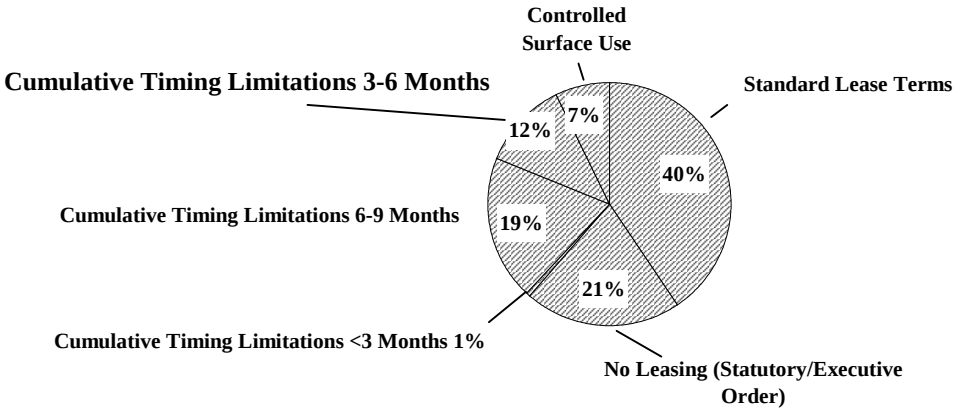
Table 4-46. Technically Recoverable, Undiscovered Resources in Designated Open and Closed Areas—Alternative A

Oil and Gas Leasing Designation	Area		Total Liquids[1]		Total Natural Gas[2]	
	Acres	Square Miles	Barrels per Square Mile[3]	Millions of Barrels of Oil	Cubic Feet per Square Mile[4]	Billions of Cubic Feet of Gas
Open Subject to NSO	0	0	0–20,000	0	0–500,000,000	0
Closed	446,900	695	0–20,000	0–14	0–500,000,000	0–348

1. Includes oil, natural gas liquids (NGLs), and liquids associated with natural gas reservoirs.
2. Includes associated dissolved and non-associated natural gas.
3. Estimate from USDI, USDA, USDOE 2003, p. 2–15.
4. Estimate from USDI, USDA, USDOE 2003, p. 2–20.

In addition, the percentage of the lands managed by the RFO in each open and closed oil and gas designation is shown in Figure 4-1. Among the alternatives, management of other resources under Alternative A would result in the most acres in the Standard Lease Terms category, thus having the least impact to oil and gas exploration and development.

Figure 4-1. Percentage of Public Lands in each Open and Closed Designation—Alternative A



Proposed RMP. Based on the 2003 EPCA report, the estimated oil and gas resources in each oil and gas leasing designation are summarized in Table 4-47 and on Map 4-2.

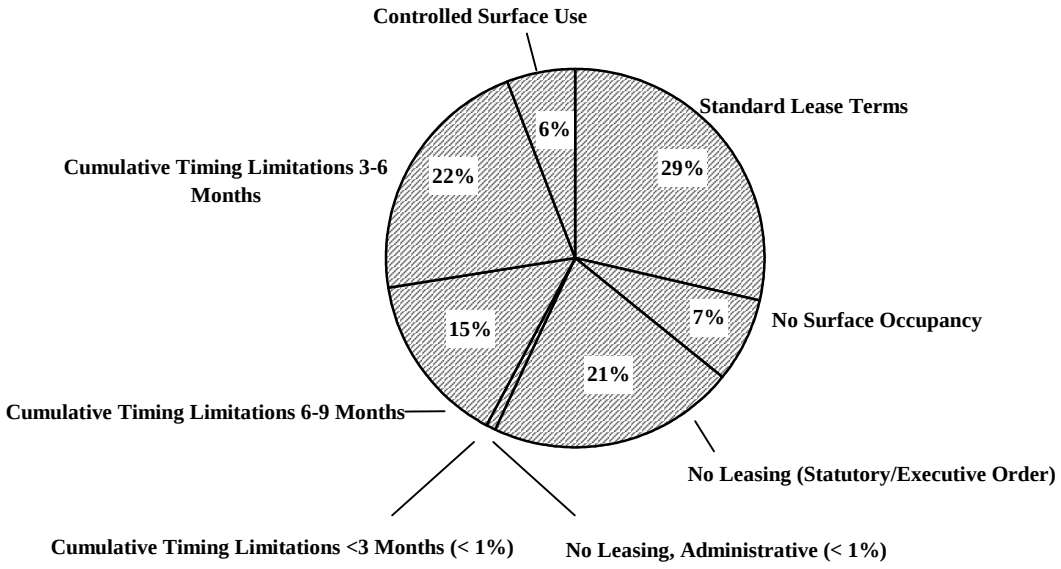
Table 4-47. Technically Recoverable, Undiscovered Resources in Designated Open and Closed Areas—Proposed RMP

Oil and Gas Leasing Designation	Area		Total Liquids[1]		Total Natural Gas[2]	
	Acres	Square Miles	Barrels per Square Mile[3]	Million Barrels of Oil	Cubic Feet per Square Mile[4]	Billion Cubic Feet of Gas
Unrecoverable NSO	28,900	45	0–20,000	0.8	0–500,000,000	1.2
Closed to leasing	447,300	699	0–20,000	6.9	0–500,000,000	8.0

1. Includes oil, NGLs and liquids associated with natural gas reservoirs.
2. Includes associated dissolved and non-associated natural gas.
3. Estimate from USDI, USDA, USDOE 2003, p. 2–15.
4. Estimate from USDI, USDA, USDOE 2003, p. 2–20.

In addition, the percentage of the lands managed by the RFO in each open and closed oil and gas designation is shown in Figure 4-2. Under this alternative, less acreage would be leased with standard lease terms and some areas would be NSO. In this alternative, proposed decisions for other resources would have more impact to oil and gas exploration and development than Alternatives N and A, but less than Alternative C.

Figure 4-2. Percentage of Public Lands in each Open and Closed Designation—Proposed RMP



Alternative C. Based on the 2003 EPCA report, the estimated oil and gas resources in each oil and gas leasing designation are summarized in Table 4-48 and on Map 4-3.

Table 4-48. Technically Recoverable, Undiscovered Resources in Designated Open and Closed Areas—Alternative C

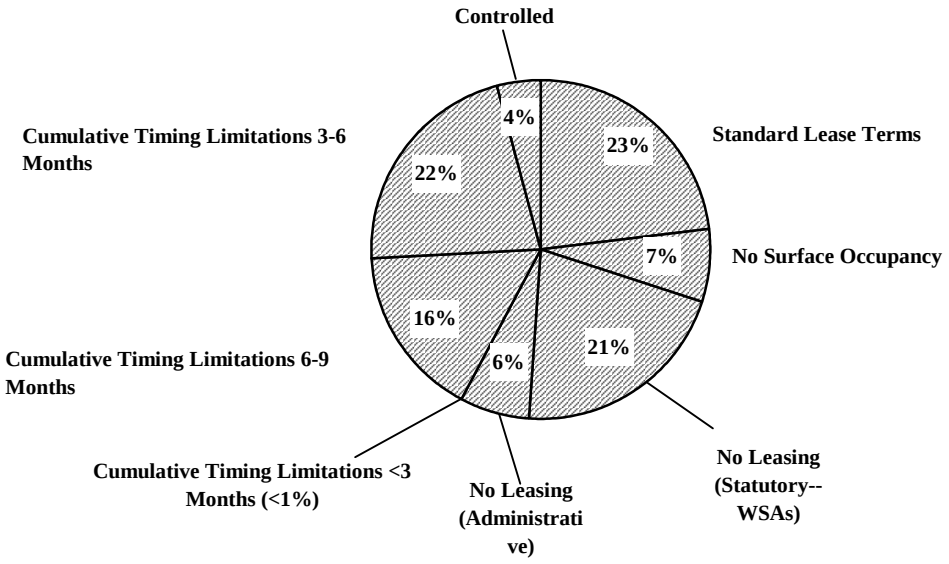
Oil and Gas Leasing Designation	Area		Total Liquids[1]		Total Natural Gas[2]	
	Acres	Square Miles	Barrels per Square Mile[3]	Million Barrels of Oil	Cubic Feet per Square Mile[4]	Billion Cubic Feet of Gas
Open Subject to NSO	148,700	233	0–20,000	0–5	0–500,000,000	0–116
Closed	586,300	916	0–20,000	0–18	0–500,000,000	0–458

1. Includes oil, NGLs and liquids associated with natural gas reservoirs.
2. Includes associated dissolved and non-associated natural gas.
3. Estimate from USDI, USDA, USDOE 2003, p. 2–15.
4. Estimate from USDI, USDA, USDOE 2003, p. 2–20.

In addition, the percentage of the lands managed by the RFO in each open and closed oil and gas designation is shown in Figure 4-3. As stated under Alternative N, the *Mineral Potential Report* and the RFD show oil and gas potential and a reasonable forecast of oil and gas activity in the lands managed by the RFO. Under Alternative C, management of other resources would have more impact to oil and gas exploration and development as compared to Alternatives N, A, and the Proposed RMP. There would be less acreage leased with standard terms and more acres leased with NSO or closed to leasing. Within NSO

areas, this would result in increased costs, decreasing the likelihood of successful exploration. Closed areas would preclude oil and gas exploration and development.

Figure 4-3. Percentage of Public Lands in each Open and Closed Designation—Alternative C



Alternative D. Based on the 2003 EPCA report, the estimated oil and gas resources in each oil and gas leasing designation are summarized in Table 4-49 and on Map 4-4.

Table 4-49. Technically Recoverable, Undiscovered Resources in Designated Open and Closed Areas—Alternative D

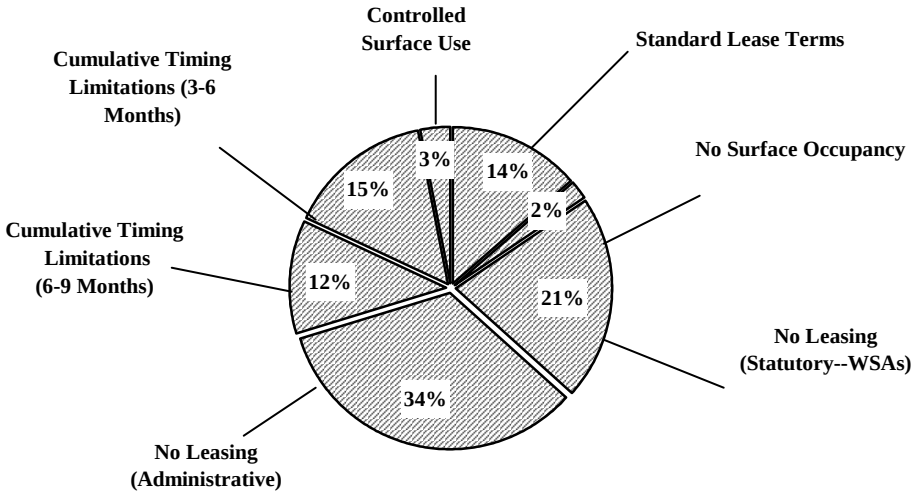
Oil and Gas Leasing Designation	Area		Total Liquids[1]		Total Natural Gas[2]	
	Acres	Square Miles	Barrels per Square Mile[3]	Million Barrels of Oil	Cubic Feet per Square Mile[4]	Billion Cubic Feet of Gas
Open Subject NSO	43,300	68	0–20,000	0–1	0–500,000,000	0–34
Closed	1,160,500	1,811	0–20,000	0–36	0–500,000,000	0–906

1. Includes oil, NGLs and liquids associated with natural gas reservoirs.
2. Includes associated dissolved and non-associated natural gas.
3. Estimate from USDI, USDA, USDOE 2003, p. 2–15.
4. Estimate from USDI, USDA, USDOE 2003, p. 2–20.

In addition, the percentage of the lands managed by the RFO in each open and closed oil and gas designation is shown in Figure 4-4. Among the alternatives, management prescriptions under Alternative D would have the greatest impact on the opportunities for oil and gas exploration and development. This

alternative would allow the least acres leased with standard terms. This alternative would have the most acres closed to leasing (55% of the RFO), precluding oil and gas exploration and development.

Figure 4-4. Percentage of Public Lands in each Open and Closed Designation—Alternative D



Geothermal Resources

Geothermal resources are leased under the Geothermal Steam Act of 1970. Through land use planning, the BLM uses the same guidelines for geothermal leasing as it does for oil and gas leasing in designating areas as open subject to standard lease terms, open subject to major or minor constraints, and closed to leasing. Lands available for geothermal leasing would follow the oil and gas leasing designations. The provisions for exceptions, modifications, and waivers would also apply to geothermal resources.

Methods and Assumptions

The analysis for impacts to geothermal resources assumes:

- Geothermal resource activity—exploration, drilling, and production if paying quantities are discovered—would be managed according to applicable law, federal regulations, and onshore orders and would be managed to mitigate impacts to other resources according to BMPs appropriate to the site/location.
- The RFD is a reasonable prediction of geothermal resource activity for the planning horizon.

Environmental Consequences

The impacts to geothermal resources would be similar to oil and gas because geothermal resources would be subject to the same leasing designations as oil and gas with differences as follows.

The high potential for the occurrence of geothermal resources is in the western part of the RFO, generally in the vicinity of the Sevier Valley, Sanpete Valley, and Marysvale. The high-potential area coincides

approximately with the Colorado Plateau–Basin and Range Transition Zone. Development of geothermal resources is not considered likely, but if it were to occur, it would most likely be in the vicinity of known hot springs and a former Known Geothermal Resource Area (KGRA) in the vicinity of Joseph and Monroe.

Tar Sands

Tar sands, or bituminous sandstone, are minerals that are subject to the Mineral Leasing Act of 1920, as amended, and the Combined Hydrocarbon Act of 1980. The Energy Act of 2005 required the BLM to develop a leasing program for tar sands. The BLM is preparing an EIS to address the leasing of tar sands. The requirements for land use planning for tar sands are similar to oil and gas leasing. The BLM may designate public land as open subject to standard terms, open subject to minor or major constraints, or closed to leasing. Exceptions, modifications, and waivers would also be allowed as described in the Tar Sands Draft RMP/EIS. One STSA, the Tar Sands Triangle, overlaps BLM lands on the Wayne and Garfield County lines in the eastern part of the RFO.

Methods and Assumptions

The analysis for impacts assumes exploration and development would be governed by the applicable laws and regulations.

Environmental Consequences

The impacts to tar sands under each alternative would be similar to oil and gas, although recognizing that the types of wells, facilities, and infrastructure necessary to explore and develop tar sands would differ from conventional oil and gas. The oil and gas leasing restrictions would apply to tar sands leasing. Existing oil and gas leases pending conversion to combined hydrocarbon leases were addressed under the discussion for oil and gas.

Coal

Federal regulations for the management of coal resources are at 43 CFR 3400. Coal resources within the planning area occur in three coal fields: the southern part of the Wasatch Plateau, Emery, and Henry Mountains. Land use planning for coal leasing requires an evaluation to determine the coal resources that have development potential by surface or underground mining methods, then a subsequent evaluation under the coal unsuitability criteria, as defined at 43 CFR 3461.5, to determine the coal resources that are acceptable for further consideration of leasing.

Alternative N: No Action

For Alternative N, the coal evaluations and unsuitability reports were completed as part of the current land use plans. The unsuitability criteria were applied to the Wasatch Plateau and Emery coal fields as one study area and to the Henry Mountains coal field as another study area.

Alternatives A–D

For Alternatives A–D, the coal resources in these three fields were evaluated in two resource reports in 2003–2004 to delineate coal with development potential that would be mined by underground or surface mining methods, based on parameters and assumptions presented in the coal evaluation reports. Those two reports, included in Appendix 8, are:

- *Coal Resources of the BLM Richfield Planning Area*, July 2003
- *Coal Resource Evaluation of the Henry Mountains Coal Field*, July 2004.

The coal resources that were determined to have development potential were additionally analyzed by applying the unsuitability criteria. These documents, included in Appendix 8, are:

- *Coal Unsuitability Report, Henry Mountains Coal Field* (draft), March 2005
- *Coal Unsuitability Report, Wasatch Plateau and Emery Coal Fields* (draft), March 2005.

Refer to Appendix 8 for acres identified for surface and subsurface mining of coal.

Methods and Assumptions

The analysis for impacts to coal assumes:

- Coal exploration and development would be managed according to federal regulations and would be managed to mitigate impacts to other resources.
- The coal resource evaluations are a reasonable estimation of the coal resources within the RFO for the planning horizon, based on the assumptions and analysis in the reports.

Because the reports for Alternative N combined the Wasatch Plateau and Emery coal fields without differentiating the resources within each field, the acreage for the Wasatch Plateau coal field is included in the discussion for that alternative. However, for Alternatives A–D, this analysis only addresses BLM-administered lands; thus, the discussion does not include the Wasatch Plateau for these alternatives. Coal resources in the southern Wasatch Plateau and Emery coal fields on the Fishlake or Manti-LaSal National Forests would be further considered in the Forest Plans for those two forests. The impact analysis for Alternatives A–D is only for BLM-administered lands.

Environmental Consequences

Impacts to coal exploration and development would most likely result from actions proposed for the management of the following resources:

- Soil Resources and Water Resources
- Cultural Resources
- Fish and Wildlife
- Visual Resources
- Non-WSA Lands with Wilderness Characteristics
- Recreation
- Special Designations.

Other programs were determined to have little or no impact on exploration and development of coal resources. There are no WSA or WSR decisions that would impact coal resources.

Alternative N: No Action

Impacts from Soil Resources and Water Resources

Managing public lands to protect soil and water would have an impact on coal resource exploration and development and could modify proposed activity, when an application is received by the BLM. The mitigations would be site-specific at the time of an application. As consistent with resource protection and applicable federal laws and regulations, mitigations would include requirements such as stockpiling topsoil for reclamation and avoiding live water by 500 feet. Such a buffer would not preclude drilling and other exploration activities and necessary facilities, such as roads, although such sites and facilities may

be relocated to avoid live water, as necessary. In the case of a mine, most likely for a surface mine, imposing a 500-foot buffer could result in a redesign of the mine and loss of recoverable coal.

Impacts from Cultural Resources

Managing public lands to protect cultural resources would have an impact on coal exploration and development, as mitigations would be developed that would modify proposed activity when an application is received by the BLM and as needed to protect cultural resources. The mitigations would be site-specific at the time of an application as consistent with applicable federal laws and regulations. Avoidance of cultural resource sites would not preclude drilling and other exploration activities, although specific drill or exploration sites and facilities, such as roads, may need to be relocated. In the case of a mine, most likely for a surface mine, avoidance of cultural resources could result in a redesign of the mine and loss of recoverable coal.

Impacts from Fish and Wildlife

Under this alternative, restrictions for wildlife, such as seasonal restraints, would apply to coal exploration and development. In the Henry Mountains coal field, 17,268 acres of coal resources are within crucial habitat, and in the Wasatch Plateau and Emery coal fields, 28,781 acres of coal resources are within crucial habitat. The crucial habitat is unsuitable for surface mining and is subject to no surface-disturbing activities during the restricted season for underground mining. The seasonal restriction would impact coal exploration by reducing the time frame during which such work could be completed. For an underground coal mine, locating portals, other facilities, and infrastructure outside of the seasonally restricted area would affect the feasibility of the coal mining and the operation of the mine. The seasonal restrictions would preclude coal development if surface facilities needed to be located within a restricted area and an exception is not applicable.

Impacts from Visual Resources

Managing visual resources on public lands would have an impact on coal resources. VRM classes of coal resources determined acceptable for further consideration of leasing are shown in Table 4-50:

Table 4-50. VRM Classes of Coal Resources, Alternative N

		Acres of Coal Resources by VRM Class			
Coal Field	**Mining Method**	**Class I**	**Class II**	**Class III**	**Class IV**
Henry Mountains	**Surface**	0	3,401	7,419	14,172
	Underground	0	25,258	29,471	66,373
Emery	**Surface**	0	1,411	3,935	6,821
	Underground	0	3,108	1,377	9,817

VRM Class I lands are unsuitable for coal leasing, and, except for WSAs, public lands are not classified as VRM Class I in this alternative. (BLM policy requires that WSAs be managed to meet VRM Class I objectives. Thus, WSAs are not suitable for coal leasing.) The objective of VRM Class II is to retain the character of the landscape with a low level of change, VRM Class III is to partially retain the character of the landscape with change that may be seen without dominating the view of the casual observer, and VRM Class IV allows for major modifications of the landscape. Mitigations as appropriate for the VRM class would be imposed on coal operations at the time of an application, as consistent with federal laws and regulations. VRM Class II would be the most restrictive of the three classes of VRM applicable here. Conforming to the objectives of VRM Class II may require relocation of drill sites and other exploration

activities and could preclude development of a coal mine, particularly a surface mine, and loss of recoverable coal. VRM Classes III and IV are less restrictive than VRM Classes I and II. The VRM Classes III and IV would not preclude exploration and development of coal resources, although proposals would be modified to be consistent with the VRM class and applicable laws and regulations.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under this alternative, no actions to maintain wilderness characteristics on lands outside of WSAs are proposed, resulting in no impact to coal exploration and development.

Impacts from Recreation

In this alternative, there are no SRMAs that would impact coal exploration and development.

Impacts from Special Designations

Areas of Critical Environmental Concern

Three of the existing ACECs in this alternative would affect exploration of coal resources. Gilbert Badlands (3,680 acres) includes restrictions for steep slopes and wet and muddy conditions, and the North and South Caineville Mesas (2,200 and 4,100 acres, respectively) are subject to NSO. None of these ACECs have coal resources that are acceptable for further consideration of leasing by surface mining methods. Exploration would not be allowed within the ACECs with the NSO restriction.

Alternative A

Impacts from Soil Resource sand Water Resources

Impacts on coal exploration and development from soil and water would be similar to Alternative N, except activity would not be allowed:

- Within 330 feet of live water or springs
- Within zones of hydric soils
- On slopes greater than 30 percent.

The exceptions, modifications, and waivers as described for oil and gas leasing would apply to coal exploration and development and would be considered at the time of an application for license or lease. The impacts of the 330-foot buffer would be similar to the 500-foot buffer, as addressed in Alternative N. Disallowing exploration and development activities within areas of hydric soils and slopes greater than 30 % would preclude development of coal resources and loss of recoverable coal.

Impacts from Cultural Resources

Impacts would be the same as Alternative N.

Impacts from Fish and Wildlife

Managing public lands for wildlife habitat would have an impact on coal exploration and development by imposing seasonal restraints for crucial wildlife habitat. In the Henry Mountains coal field, 10,871 acres of coal resources acceptable for consideration of leasing with a surface mining method and 41,347 acres with an underground mining method are contained within lands subject to minor constraints, such as the seasonal crucial wildlife habitat. In the Emery coal field, 5,126 acres with an underground mining method are contained within land subject to minor constraints. The seasonal restriction would impact coal exploration by reducing the time frame during which such work would be completed. For a coal mine, the seasonal restriction would impose shut downs, if the restriction is not modified or waived. Such shut downs would affect the feasibility of the surface coal mining and would render the mine inoperable. For an underground coal mine, locating portals, other facilities, and infrastructure outside of the seasonally

restricted area would affect the feasibility of the coal mining and the operation of the mine. These impacts to coal leasing would preclude coal development, if modifications and waivers are not considered at the time of application for a lease.

Impacts from Visual Resource Management

Managing visual resources on public lands would have an impact on coal resources. VRM classes of coal resources determined acceptable for further consideration of leasing are shown in Table 4-51:

Table 4-51. VRM Classes of Coal Resources, Alternative A

		Acres of Coal Resources by VRM Class			
Coal Field	**Mining Method**	**Class I**	**Class II**	**Class III**	**Class IV**
Henry Mountains	**Surface**	0	0	290	14,378
	Underground	0	0	723	40,629
Emery	**Underground**	0	0	5,125	4,497

Public lands with acceptable resources for mining would not be designated as VRM Classes I or II under this alternative. Mitigations as appropriate for the VRM class would be imposed on coal operations at the time of an application, as consistent with federal laws and regulations. VRM Classes III and IV would not preclude exploration and development of coal resources, although proposals may need to be modified to be consistent with the VRM class and applicable laws and regulations.

Impacts from Non-WSA Land with Wilderness Characteristics

Impacts would be the same as for Alternative N.

Impacts from Recreation

Under this alternative, only the Factory Butte SRMA would overlap coal resources. The management prescription of this SRMA provides opportunities for cross-country OHV use, which would not restrict coal exploration and development.

Impacts from Special Designations

Areas of Critical Environmental Concern

No new ACECs would be designated in this alternative, and the four existing ACECs in Alternative N would no longer be designated as such. Thus, there would be no impacts to coal exploration and development from ACEC designations or the associated special management prescriptions.

Proposed RMP

Impacts from Soil Resources and Water Resources

Impacts would be the same as described under Alternative A.

Impacts from Cultural Resources

Impacts would be the same as described under Alternative N.

Impacts from Fish and Wildlife

The types of impacts from management of fish and wildlife would be the same as Alternative A, except the acreage that is restricted is different in this alternative. In the Henry Mountains coal field, 11,759

acres of coal resources acceptable for consideration of leasing with a surface mining method and 40,550 acres with an underground mining method are contained within lands subject to minor constraints, such as the seasonal crucial wildlife habitat. In the Emery coal field, 7,358 acres with an underground mining method are contained within land subject to minor constraints. This alternative has additional acreage leased with minor constraints, thus there would be greater potential for restrictions of coal development.

Impacts from Visual Resource Management

Impacts to coal exploration and development would be the same as Alternative A, except the acreage in each VRM class would change. VRM classes of coal resources determined acceptable for further consideration of leasing are shown in Table 4-52:

Table 4-52. VRM Classes of Coal Resources, Proposed RMP

		Acres of Coal Resources by VRM Class			
Coal Field	**Mining Method**	**Class I**	**Class II**	**Class III**	**Class IV**
Henry Mountains	**Surface**	0	1,219	110	13,339
	Underground	0	4,146	0	37,205
Emery	**Underground**	0	1,701	357	7,564

Public lands with acceptable resources for mining would not be designated as VRM Class I in this alternative. Mitigations as appropriate for the VRM Classes II through IV would be imposed on coal operations at the time of an application, as consistent with federal laws and regulations. VRM Class II would be the most restrictive of the three VRM classes; VRM Class IV, the least. The VRM designations would not preclude coal exploration and development, although proposals would be modified to be consistent with the VRM class and applicable laws and regulations.

Impacts from Non-WSA Land with Wilderness Characteristics

Although 78,600 acres of non-WSA lands would be managed to maintain wilderness characteristics, the prescriptions identified in Chapter 2 would not preclude coal mining; therefore, impacts would be the same as for Alternative N.

Impacts from Recreation

Under the Proposed RMP, the Henry Mountains and Factory Butte SRMAs would overlap coal resources in the Henry Mountains coal field. The Henry Mountains SRMA would provide opportunities for primitive and semi-primitive motorized and non-motorized recreation. The SRMA would not preclude coal exploration and development, but such exploration and development could be in conflict with SRMA goals and objectives.

The Factory Butte SRMA would provide opportunities for cross-country OHV use. This SRMA would not necessarily restrict coal exploration and development.

Impacts from Special Designations

Areas of Critical Environmental Concern

North Caineville Mesa would be the only designated ACEC within a coal field and would be subject to NSO. A coal resource acceptable for consideration of leasing has not been identified within this ACEC, and exploration would not be allowed due to the NSO restriction.

Alternative C

Impacts from Soil Resources and Water Resources

The types of impacts would be the same as Alternative A, except the buffer around live water and springs would be 660 feet. The impacts of the 660-foot buffer would be double the buffer distance for live water, as addressed in Alternative A, which could increase the number of drill sites and other exploration sites that may be relocated. It would also increase the possibility of redesign of a proposed mine and increase the loss of recoverable coal resources.

Impacts from Cultural Resources

Impacts would be the same as described under Alternative N.

Impacts from Fish and Wildlife

The types of impacts from management of fish and wildlife would be the same as Alternative A, except the acreage that is restricted is different in this alternative. In the Henry Mountains coal field, 9,447 acres of coal resources acceptable for consideration of leasing with a surface mining method and 33,249 acres with an underground mining method are contained within lands subject to minor constraints, such as the seasonal crucial wildlife habitat. In the Emery coal field, 7,922 acres with an underground mining method are contained within land subject to minor constraints. This alternative would allow fewer acres available for surface mining and require minor constraints for more acres of the RFO. This alternative would have greater impacts on coal resources than Alternatives N, A, and the Proposed RMP, but less impacts than Alternative D.

Impacts from Visual Resource Management

The types of impacts to coal exploration and development would be the same as Alternative A, except the acreage in each VRM class would change and VRM Class II areas would be closed to coal leasing. VRM classes of coal resources determined acceptable for further consideration of leasing are shown in Table 4-53.

Table 4-53. VRM Classes of Coal Resources, Alternative C

		Acres of Coal Resources by VRM Class			
Coal Field	**Mining Method**	**Class I**	**Class II**	**Class III**	**Class IV**
Henry Mountains	**Surface**	0	3,013	4,094	7,562
	Underground	0	8,134	10,039	23,178
Emery	**Underground**	0	1,701	357	7,564

Under this alternative, 11,147 acres of coal resources, including surface and underground resources, in the Henry Mountains coal field and 1,701 acres in the Emery coal field that are acceptable for the consideration of leasing would be precluded from any coal development or leasing due to the VRM Class II lands being closed to leasing, resulting in the loss of recoverable coal resources. Mitigations as appropriate for the VRM Classes III and IV would be imposed on coal operations at the time of an application, as consistent with federal laws and regulations. VRM Class III and IV would not preclude exploration and development of coal resources.

Impacts from Non-WSA Land with Wilderness Characteristics

Impacts would be the same as described under Alternative N.

Impacts from Recreation

Under this alternative, the Henry Mountains SRMA would overlap coal resources in the Henry Mountains coal field. This SRMA would provide opportunities for primitive and semi-primitive motorized and primitive non-motorized recreation. Class A scenery would be closed to leasing and areas within the view shed of Capitol Reef National Park would be NSO. In this SRMA, 2,012 acres of coal resources that are acceptable for the consideration of leasing by surface mining and 7,279 acres acceptable by underground mining would be subject to NSO. In addition, 418 acres of coal resources acceptable for the further consideration of leasing by surface mining and 823 acres of coal resources acceptable by underground mining would be closed to leasing. The NSO designation would reduce or eliminate the opportunity to explore and develop coal resources, depending on whether exceptions, modifications, or waivers would apply to the specific application to explore or lease coal resources. The public lands closed to leasing would not be leased for coal development.

Impacts from Special Designations

Areas of Critical Environmental Concern

Under this alternative, the potential Badlands and Henry Mountains ACECs would overlap the Henry Mountains coal field, and the potential Thousand Lakes Bench ACECs would overlap the Emery coal field. The Badlands ACEC would be closed to leasing, and the Henry Mountains ACEC would be closed to leasing in VRM Class II. The Thousand Lakes Bench ACEC would be managed to protect cultural resources, special status plants, and riparian, which could affect siting of exploration and development but would not likely preclude leasing in a large area. In the Henry Mountains coal field, 8,134 acres of coal resources acceptable for leasing by underground mining methods and 3,013 acres acceptable for surface mining methods would be closed to leasing due to the management of the two ACECs. Closing these public lands to coal leasing would preclude exploration and development of coal resources within those portions of the ACECs.

Alternative D

Impacts from Soil Resources and Water Resources

Impacts would be the same as those described under Alternative C.

Impacts from Cultural Resources

Impacts would be the same as those described under Alternative N.

Impacts from Fish and Wildlife

The types of impacts from management of fish and wildlife would be the same as Alternative A, except the acreage that is restricted is different in this alternative. In the Henry Mountains coal field, there are 2,592 acres of coal resources acceptable for consideration of leasing with a surface mining method, and 10,135 acres with an underground mining method are contained within lands subject to minor constraints, such as the seasonal timing limitations. In the Emery coal field, 3,888 acres with an underground mining method are contained within land subject to minor constraints. This alternative would allow surface mining on the fewest acres of any alternative. This alternative also has the fewest acres available for underground mining with only minor constraints, thus resulting in the greatest impact on the development of coal resources.

Impacts from Visual Resource Management

Impacts to coal exploration and development would be the same as those described under Alternative A, except the acreage in each VRM class would change and coal resources within VRM Classes I and II would be closed to leasing. VRM classes of coal resources determined acceptable for further consideration of leasing are shown in Table 4-54.

Table 4-54. VRM Classes of Coal Resources, Alternative D

		Acres of Coal Resources by VRM Class			
Coal Field	**Mining Method**	**Class I**	**Class II**	**Class III**	**Class IV**
Henry Mountains	**Surface**	10,008	706	2,358	1,627
	Underground	30,121	1,164	4,142	5,928
Emery	**Underground**	4,034	1,701	39	3,849

The acreages for the above-listed VRM Class I areas are for public lands outside WSAs and are acceptable for further consideration of leasing. Under this alternative, public lands designated as VRM Classes I and II would be closed to leasing, which would result in 41,999 acres of coal resources in the Henry Mountains coal field and 5,735 acres in the Emery coal field being precluded from any coal development. This would be a substantial impact to the availability of coal resources that are minable by the listed mining methods, as these coal resources would be unavailable for leasing. Mitigations as appropriate for VRM Classes III and IV would be imposed on coal operations at the time of an application, as consistent with federal laws and regulations.

Impacts from Non-WSA Land with Wilderness Characteristics

Under this alternative, all of the non-WSA lands with wilderness characteristics would be closed to leasing. In the Henry Mountains, 9,936 acres of coal resources that are acceptable for consideration of leasing by surface mining and 30,183 acres by underground mining would be unavailable for development. In the Emery coal field, 4,034 acres of coal resources that are acceptable by underground mining would be unavailable for leasing. These lands would be precluded from coal exploration and development. This would be a substantial impact to the availability of coal resources that are minable by the listed mining methods, as these coal resources would be unavailable for leasing.

Impacts from Recreation

Under this alternative, the Henry Mountains and Capitol Reef Gateway SRMAs would overlap coal resources. These SRMAs would provide opportunities for primitive and semi-primitive motorized and primitive non-motorized recreation. In these SRMAs, 1,480 acres of coal resources that are acceptable for the consideration of leasing by surface mining and 848 acres acceptable for the consideration of leasing by underground mining would be subject to NSO. In addition, 10,832 acres of coal resources acceptable for the further consideration of leasing by surface mining and 30,367 acres of coal resources acceptable by underground mining would be closed to leasing. The NSO designation would reduce or eliminate the opportunity to explore and develop coal resources, depending on whether exceptions, modifications, or waivers would apply to the specific application to explore or lease coal resources. The public lands closed to leasing would not be leased for coal development.

Impacts from Special Designations

Areas of Critical Environmental Concern

Impacts would be the same as those described under Alternative C.

Non-Energy Solid Leasable Minerals

These solid leasable minerals are leased under the Mineral Leasing Act of 1920, as amended, and the federal regulations at 43 CFR Part 3500. Through land use planning, the BLM may designate public land as open or closed to leasing, and the use of open areas may be restricted by special conditions. The

designations of open, open with special conditions, and closed would follow the oil and gas leasing designations to the extent practicable. The areas open with special conditions include the oil and gas open with minor constraints (timing or controlled surface use) and open with major constraints (NSO). The provisions for exceptions, modifications, and waivers would also apply to non-energy solid leasable minerals.

Methods and Assumptions

The analysis for impacts to non-energy solid leasable minerals assumes exploration and development would be regulated under all applicable laws and regulations.

Environmental Consequences

The impacts to non-energy solid leasable minerals would be similar to those impacts on oil and gas leasing and development under all alternatives. However, under Alternative N, the oil and gas leasing restrictions do not apply to these leasable minerals. Operations for solid minerals do not involve the same operations as oil and gas. Exploration for these minerals would include drilling, testing by excavating trenches or pits, bulk sampling, and other surface disturbances, and production would involve surface mines or quarries, underground mines, or in situ extraction. Additional facilities would be constructed as necessary for processing the mined or extracted mineral and for building an infrastructure, as needed, to develop a mine and to market the extracted mineral.

Non-energy solid leasable minerals are unlikely to see development during the planning horizon. Sodium and potassium as evaporitic or saline minerals have high potential in the Sevier and Sanpete Valleys, generally in association with the outcrop and mapped subsurface of the Arapien Shale. Also, such minerals have high potential in the mapped subsurface of Paleozoic strata and facies in the Paradox Basin, proper, where salt has been penetrated in deep oil and gas wells. However, neither the Sevier–Sanpete Valley area nor the Paradox Basin are likely to see exploration and development due to the relative abundance and more marketable saline resources at the Great Salt Lake in Utah. The area with high potential for salt in the Sevier and Sanpete Valleys is not encumbered by other proposed management prescriptions (such as ACECs, SRMAs, SSS, or VRM) that would preclude or substantially restrict such exploration and development. The high-potential area for salt in the Paradox Basin is encumbered in part by WSAs, ACECs, SRMAs, and VRM that would restrict such exploration and development.

Alunite or clay alteration deposits that would contain potassium are present in association with the Marysvale volcanic field. The high-potential area for such deposits is generally located in the vicinity of Marysvale. The potassium in the past has been prospected as a source of fertilizer. Such development is considered unlikely during the planning horizon. These deposits in the Marysvale field are not encumbered by other proposed management prescriptions (such as ACECs, SRMAs, SSS, or VRM) that would preclude or restrict such exploration or substantially restrict such exploration and development.

4.4.6.2 Locatable Minerals

Locatable minerals are those valuable under the U.S. mining laws, generally referred to as the 1872 Mining Law. Locatable minerals are subject to entry and location. Entry means the public land is subject to application for title to the land, (e.g., patenting under the mining laws). The BLM does not have discretion as to entry and location of mining claims on open, unappropriated, public lands and does not have the discretion to determine mitigations for mining claims at the time of location. However, the BLM does have discretion to make public lands open to entry or to close lands, (e.g., withdraw certain public lands from the operations of the mining laws). The BLM also has authority through FLPMA, the federal regulations at 43 CFR 3809, and other federal laws and regulations (i.e. 43 CFR 3715, etc.), as applicable, to regulate mining-related operations and the surface disturbances that would be incident to those

operations. The BLM regulates mining-related operations on public lands to prevent unnecessary or undue degradation and to ensure the operation is reasonably incident to mining. In WSAs, the BLM regulates mining-related operations under the IMP and as required by 43 CFR 3802, to prevent the impairment of a WSA's suitability for designation as wilderness by Congress.

Methods and Assumptions

The analysis for impacts to locatable minerals assumes that exploration and development will be governed by the applicable laws and regulations.

Environmental Consequences

Impacts to locatable minerals would likely result from actions proposed under the following resource management programs:

- Cultural Resources
- Visual Resources
- Special Status Species
- Non-WSA Lands with Wilderness Characteristics
- Recreation
- Travel Management
- Lands and Realty
- Special Designations.

Other programs were determined to have little or no impact on locatable minerals.

Alternative N: No Action

Impacts from Cultural Resources

Managing cultural resources requires BLM to make a reasonable and good faith effort to identify the potential effects of federal undertakings. All federal undertakings having the potential to adversely affect cultural resources must include mitigation measures designed to avoid the impact. This is covered by NHPA and its implementing regulations found at 36 CFR Part 800. Operations under the mining laws would be regulated to avoid unnecessary or undue degradation of the public land and cannot knowingly disturb, alter, injure, or destroy any historic or archaeological site, structure, building, or object listed or eligible for listing on the National Register of Historic Places. These requirements could result in the need for avoidance or modification of proposed operations. The Federal Government bears any costs of investigation and salvage of cultural resources. Exploration for locatable minerals under a Notice is not a federal action, as it is not approved by the BLM. However, the BLM would review the Notice and advise the operator of proposed activity that would impact cultural resources. Exploration or development under a Plan of Operations is a federal action and requires approval by the BLM. Before approval is granted, the proposed activity for locatable minerals would be reviewed as required under NEPA and all applicable laws, including NHPA. Mitigations, as consistent with the claimant's rights under the mining laws, would be imposed on proposed operations. Thus, managing cultural resources would require mining operators under the mining laws to not knowingly impact historic or archaeological sites and to immediately bring to the attention of the BLM any cultural resources that would be altered or destroyed by the mining operation. Modification or mitigation requirements would have adverse impacts by delaying the time required for approval of proposed operations.

Impacts from Visual Resources

Managing visual resources would be accomplished by managing public lands as subject to VRM Classes I through IV objectives. The current VRM classes for the RFO are Class I, 0 acres (0% of the RFO); Class II, 529,500 acres (25%); Class III, 569,000 acres (27%); and Class IV, 1,029,500 acres (48%). It should be noted that BLM policy requires WSAs to be managed to meet VRM Class I objectives. The lands within the WSAs were inventoried as VRM Class II and are represented as such in this section. However, 446,900 acres would actually be managed as VRM Class I, to preserve the existing character of the landscape. Consistent with the IMP and as required by 43 CFR 3802.3-2, operations proposed within WSAs would be mitigated to harmonize operations, to the extent practicable, with visual resources. VRM Class II objectives are more restrictive in terms of allowing changes to the landscape than Classes III and IV, with Class IV being the least restrictive. Notices would be reviewed, and the claimant would be advised of the steps necessary in order to be in conformance with the VRM class, as consistent with the claimant's rights under the mining laws. Drilling or other exploration sites and facilities could be relocated in VRM Class II areas to the extent practicable and to preserve the claimant's rights. Plans of operations would be reviewed under NEPA and approved in accordance with the VRM class and the claimant's rights. As consistent with 43 CFR 3809.5, operations would be designed to minimize and reduce adverse visual impacts and avoid or eliminate such impacts, as practical. Thus, operations may need to be relocated in order to utilize screening within the natural topography and may be modified in color, shape, and size, as consistent with a claimant's rights. This action could result in delays in authorizing proposed operations and additional costs.

Impacts from Special Status Species

All federal actions are subject to the requirements of the ESA, as amended. A plan of operations is required for operations proposed on lands or waters known to contain federally-proposed or listed threatened or endangered species or their proposed or designated critical habitats, unless the BLM allows for other actions under a land use plan or threatened or endangered species recovery plan, as stated at 43 CFR 3809.11(c)(6). The operator would be required to take such actions as may be needed to prevent adverse impacts to threatened or endangered species and habitat that may be affected by mining-related operations. Prior to approving any mining action potentially affecting any listed threatened or endangered species, the BLM must consult with USFWS under Section 7 of the ESA. As necessary and appropriate with the claimant's rights, mitigation, such as timing and avoidance, may be required to avoid or reduce potential impacts to listed species, species proposed for listing, and designated critical habitat. This could result in delays in approval of proposals. Some mitigation, such as timing and avoidance could reduce the success of or preclude some operations. Under this alternative, surface disturbing activities would be prohibited near Greater sage-grouse leks from March 1 through July 15 and within sage-grouse brooding habitat from April 1 through June 15.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under this alternative, no actions to maintain wilderness characteristics on lands outside of WSAs are proposed, resulting in no impacts to mining of locatable minerals.

Impacts from Recreation

Developed recreation sites would be proposed for withdrawal from mineral entry. These sites include Hog Springs Picnic Area, Lonesome Beaver Campground, McMillan Spring Campground, Starr Springs Campground, and Dandelion Flat Picnic Area. The acreage varies but generally would be less than 20 acres at each site. Withdrawal, if executed, would preclude any operations and development of minerals under the mining laws. These recreation sites are in areas with moderate to high potential for the occurrence of locatable minerals but are considered unlikely to have mineral development.

Impacts from Travel Management

Off-highway vehicle management restricting cross-country travel would affect locatable minerals. A plan of operations would be required for any closed area, as stated at 43 CFR 3809.11(c)(5). In this alternative, there would be 214,000 acres closed to cross-country motorized travel. This may increase the processing time for the review and approval of the plan of operations under applicable federal laws and regulations. Increased processing time may also occur for the 277,600 acres where motorized use is limited to existing/designated/maintained routes. If a new access route were needed for the proposed operation, additional processing time may be necessary, resulting in project delays and additional costs.

Impacts from Lands and Realty

Under this alternative, developed recreation sites and existing ACECs (14,780 acres) would be recommended for withdrawal from mineral entry, in addition to the existing withdrawals (154,700 acres). No mining-related operations under the mining laws could occur within the withdrawn lands, resulting in a potential loss of minerals development and the associated economic benefits. These recreation sites and ACECs are generally within areas with a high potential for the occurrence of locatable minerals. Valid existing rights would be recognized in withdrawn land.

Impacts from Special Designations

Wilderness Study Areas

Managing WSAs under the federal regulations at 43 CFR 3802 and the IMP would impact locatable minerals. There are ten active, recorded mining claims within the Mount Pennell WSA and four within the Bull Mountain WSA. WSAs are not withdrawn from mineral entry. However, all mining-related operations are subject to the IMP such that actions may not impair the suitability of the WSA for inclusion in the Wilderness Preservation System; thus precluding exploration and development of locatable minerals unless the activity is non-impairing, a grandfathered use, or a valid existing right. The WSAs are within an area rated as high potential for locatable minerals, increasing the potential for adverse impacts to locatable minerals and the loss of associated economic benefits.

Wild and Scenic Rivers

Managing 12 eligible WSR corridors totaling 135 miles would affect locatable mineral exploration and development. No decision would be made under this alternative for suitability. A total of 98 miles (73% of the total miles) of the eligible river segments are also within WSAs and are thus subject to the IMP. Stream segments designated for potential addition to the National Wild and Scenic Rivers System, which includes eligible rivers, would require a plan of operations, as stated at 43 CFR 3809.11(c)(2). As the plan of operations is reviewed and approved under the applicable federal laws and regulations and as consistent with claimant's rights, mitigations may be required to protect the outstandingly remarkable values of the eligible rivers, as consistent with applicable federal laws and regulations and a claimant's rights. Requiring a plan of operations and mitigation would have adverse impacts by delaying the processing time and possibly reducing the feasibility of the proposal. Most of the eligible river segments are within areas that are rated as high potential for the occurrence of locatable minerals. However, there are no active, recorded mining claims within the eligible river segments, so potential impacts would be expected to be minor.

Areas of Critical Environmental Concern

Four ACECs are designated: Beaver Wash (4,800 acres), Gilbert Badlands (3,680 acres), North Caineville Mesa (2,200 acres), and South Caineville Mesa (4,100 acres). These ACECs are proposed for withdrawal from mineral entry, which would preclude any mining-related activity. If the above areas are designated as ACECs but not withdrawn, any proposed mining-related operation would require a plan of operation, as required at 43 CFR 3809.11(c)(3). As part of the review and approval of the plan of operations,

mitigations would be required. As these ACECs are subject to NSO or no leasing under oil and gas, a similar restriction under the mining laws would not be consistent with a claimant's rights. NSO is inconsistent with the claimant's right to occupy and use public land, reasonably incident to the mining laws. However, where consistent with claimant's rights, drilling and exploration sites and other facilities would be relocated and the critical resource(s) would be avoided. These requirements would likely result in delays due to processing time. These four ACECs are within an area rated as high potential for the occurrence of locatable minerals; however, development is considered unlikely.

Alternative A

Impacts from Cultural Resources

Impacts would be the same as those described under Alternative N.

Impacts from Visual Resources

The types of impacts from management of visual resources would be the same as Alternative N, except the VRM class designations under Alternative A would be Class I, 446,900 acres (21% of the RFO); Class II, 0 acres (0%); Class III, 392,800 acres (18%); and Class IV, 1,288,300 acres, (61%). The VRM Class I areas are coincident with WSAs, and exploration and development under the mining laws would be managed as consistent with the regulations at 43 CFR 3802. These regulations would preclude any activity for locatable minerals unless the activity is non-impairing, a grandfathered use, or a valid existing right. As required at 43 CFR 3802.3-2, operations proposed within WSAs would be mitigated to harmonize operations, to the extent practicable, with visual resources. Under this alternative, there would be no areas classified as VRM Class II, which is more restrictive in terms of allowing changes to the landscape than VRM Classes III and IV. This would result in fewer restrictions in terms of project modifications. This alternative would result in the least impacts to locatable mineral development.

Impacts from Special Status Species

Impacts would be similar to those described under Alternative N, although Alternative A has no stipulation on surface disturbing activities within Greater sage-grouse brooding/nesting habitat. Therefore, this alternative is less restrictive than Alternative N. The lease stipulations and notices for oil and gas leasing would be used as guidelines, as consistent with federal laws and regulations, the claimant's rights, and in recognition that operations for oil and gas and mining differ in scale, scope, and types of exploration and development. As practical and consistent with federal laws and regulations, proposed operations may be relocated to avoid SSS habitat. This action would result in delays in authorizing proposed operations.

Impacts from Non-WSA Lands with Wilderness Characteristics

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

Developed recreation sites would not be withdrawn from mineral entry. There would be no impact to locatable minerals, although any proposed mining operation would be regulated to prevent unnecessary or undue degradation.

Impacts from Travel Management

The types of impacts would be similar to Alternative N. However, under this alternative, there would be no areas designated as closed to motorized use. Therefore, there would be no requirement to file a plan of operations for locatable minerals due to travel designations. Within the 1,679,000 acres where OHV use would be limited to designated routes, potential impacts would depend on the need for additional access. If additional access routes were necessary, more processing time may be necessary to authorize that

access, thus delaying operations and increasing costs. This alternative is the least restrictive to locatable minerals.

Impacts from Lands and Realty

Impacts would be similar to those described under Alternative N, except that no new areas would be proposed for withdrawal from mineral entry. Thus, impacts to mining of locatable minerals would be slightly less than under Alternative N.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

The 12 eligible WSR corridors would be released as a potential addition to the National Wild and Scenic Rivers System. These corridors would be managed for unnecessary or undue degradation under 43 CFR 3809, except within WSAs or where other planning decisions may affect the regulation of mining-related activity. This would result in fewer restrictions and less processing time from what was described under Alternative N.

Areas of Critical Environmental Concern

No ACECs would be designated, and the four existing ACECs in Alternative N would no longer be designated as such. Operations under the mining laws would be regulated for the prevention of unnecessary or undue degradation, and a plan of operations would be required only if required under other applicable regulations. This would result in less restrictions or delays than under Alternative N.

Proposed RMP

Impacts from Cultural Resources

Impacts would be the same as those described under Alternative N.

Impacts from Visual Resources

The types of impacts from management of visual resources would be similar to those described under Alternative N, except the VRM class designations for this alternative would be Class I, 446,900 acres (21% of the RFO); Class II, 249,800 acres (12%); Class III, 393,100 acres (18%); and Class IV, 1,038,200 acres (49%). The VRM Class I areas are coincident with WSAs. The VRM Class I lands would be managed as consistent with the regulations at 43 CFR 3802 for exploration and development under the mining laws. These regulations would preclude any activity for locatable minerals unless the activity is non-impairing, a grandfathered use, or a valid existing right. As required at 43 CFR 3802.3-2, operations proposed within WSAs would be mitigated to harmonize operations, to the extent practicable, with visual resources. This alternative would have more acres classified as VRM Classes I and II and fewer acres as VRM Classes III and IV than under Alternatives N and A. This could result in the need for additional modifications of proposals and greater impacts to locatable minerals.

Impacts from Special Status Species

Impacts would be similar to those described under Alternative A, however, the Proposed RMP has more restrictions on surface disturbing activities within Greater sage-grouse habitat. These restrictions include NSO and timing limitations to protect breeding, brood-rearing, and winter habitats (see Appendix 11 for exceptions, waivers, and modifications). However, because 97 percent of sage grouse winter habitat is within mule deer crucial habitat, which under the Proposed RMP has a timing limitation on surface

disturbing activities from December 15 through April 15, the sage grouse winter timing limitation would only result in surface disturbing restrictions on an additional 2,200 acres. Limitations on surface disturbing activities within Greater sage-grouse habitat are greater under the Proposed RMP than under any of the other alternatives. Such limitations could reduce the success of or preclude some mining operations.

Impacts from Non-WSA Lands with Wilderness Characteristics

Although 78,600 acres of non-WSA lands would be managed to maintain wilderness characteristics, the prescriptions identified in Chapter 2 would not preclude the mining of locatable minerals, therefore, impacts would be the same as for Alternative N.

Impacts from Recreation

The impacts would be similar to Alternative N, except that additional developed recreation sites would be proposed for withdrawal from mineral entry. These sites include Lonesome Beaver Campground, McMillan Spring Campground, Starr Springs Campground, Dandelion Flat Picnic Area, Hog Springs Picnic Area, Otter Creek Reservoir Recreation Sites, Kingston Canyon Recreation Site, and Koosharem Picnic Area. The acreage varies but generally would be less than 20 acres at each site. Withdrawal, if executed, would preclude any operations under the mining laws and would preclude development of locatable minerals. These sites are in areas with moderate to high potential for the occurrence of locatable minerals but are considered unlikely to have mineral development.

Impacts from Travel Management

The types of impacts from travel management would be similar to Alternative N. A plan of operations would be required for any closed area as stated at 43 CFR 3809.11(c)(5). In this alternative, there would be 209,900 acres designated as closed to motorized use. The impact would include an increased processing time for the review and approval of the plan of operations under applicable federal laws and regulations. There would be 1,908,210 acres of the RFO limited to designated routes. The potential for impacts to mining operations within the limited areas would depend on the need for additional access. If additional access routes were necessary, more processing time may be required to authorize that access. This alternative would result in greater potential for impacts to mining than Alternatives N and A.

Impacts from Lands and Realty

Under this alternative, the following areas would be recommended for withdrawal from mineral entry:

- North Caineville Mesa ACEC
- Old Woman Front ACEC
- Fremont River (Fremont Gorge) suitable wild river within one-quarter mile of the high water mark on each bank of the river segment
- Developed recreation sites, including Lonesome Beaver Campground, McMillan Spring Campground, Starr Springs Campground, Dandelion Flat Picnic Area, Hog Springs Picnic Area, Otter Creek Reservoir Recreation Sites, Kingston Canyon Recreation Site, and Koosharem Picnic Area.

The impacts would be similar to Alternative N, except that the total acreage of the proposed new withdrawals would increase to 21,500 (this is in addition to the existing 154,700 acres withdrawn). This would result in a greater potential for impacts to mining-related operations than under Alternatives N and A. These recreation sites and ACECs are generally within areas with a moderate to high potential for the occurrence of locatable minerals. Valid existing rights would be recognized.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as described under Alternative N.

Wild and Scenic Rivers

One eligible segment—Fremont River (Fremont Gorge)—would be recommended for suitability and would be recommended for withdrawal from mineral entry, which would preclude any mining-related operations under the mining laws. Stream segments recommended suitable for potential addition to the National Wild and Scenic Rivers System, would require a plan of operations as stated at 43 CFR 3809.11(c)(2). If a plan of operations is reviewed and approved under the applicable federal laws and regulations, mitigation would be required to protect the outstandingly remarkable values of the suitable rivers consistent with a claimant's rights. However, there are no active, recorded mining claims within these suitable segments, and only one river segment (5 miles long) would be recommended for suitability with a tentative classification as wild under the Proposed RMP. The potential for impacts would be minor.

Areas of Critical Environmental Concern

North Caineville Mesa (2,200 acres) would remain as a designated ACEC, and Old Woman Front (330 acres) would be designated as an ACEC. These ACECs are proposed for withdrawal from mineral entry, and a withdrawal would preclude any mining-related activity and development of locatable minerals. If the above areas are designated as ACECs but not withdrawn, any proposed mining-related operation would require a plan of operation as required by applicable regulations. As part of the review and approval of a plan of operations, mitigations would be required. As these ACECs are subject to NSO under oil and gas, a similar restriction under the mining laws would not be consistent with a claimant's rights. NSO is inconsistent with the claimant's right to occupy and use public land, reasonably incident to the mining laws. However, where consistent with claimant's rights, drilling and exploration sites and other facilities would be relocated and the critical resource(s) would be avoided. These two ACECs would be in areas designated as high potential (North Caineville Mesa) and low potential (Old Woman Front) for the occurrence of locatable minerals; however, exploration and development are considered unlikely.

Alternative C

Impacts from Cultural Resources

Impacts would be the same as described under Alternative N.

Impacts from Visual Resources

The types of impacts from management of visual resources would be similar to those described under Alternative N, except the VRM class designations under Alternative C would be Class I,446,900 acres (21% of the RFO); Class II, 230,600 acres (11%); Class III, 509,100 acres (24%); and Class IV, 944,100 acres (44%). The VRM Class I areas are coincident with WSAs. The VRM Classes I and II acres would increase slightly over the Proposed RMP, resulting in a slightly greater potential for impacts to locatable minerals.

Impacts from Special Status Species

Impacts would be similar to those described under the Proposed RMP although Alternative C has fewer restrictions on surface-disturbing activities within Greater sage-grouse habitat.

Impacts from Non-WSA Lands with Wilderness Characteristics

Impacts would be the same as described under Alternative N.

Impacts from Recreation

Impacts would be the same as described under the Proposed RMP.

Impacts from Travel Management

Impacts from travel management would be similar to those described under the Proposed RMP, except the acres closed to motorized use and requiring a plan of operations would increase to 683,000 acres. The remainder of the RFO would be limited to designated routes, requiring additional processing time if additional access is needed. This alternative would result in greater impacts to locatable minerals than Alternatives N, A, and the Proposed RMP but fewer than Alternative D.

Impacts from Lands and Realty

Under this alternative, the following areas would be recommended for withdrawal from mineral entry:

- Rainbow Hills ACEC (in total)
- Old Woman Front ACEC (in total)
- Recommended suitable Wild and Scenic Rivers within one-quarter mile of the high water mark on each bank of the river segment.
- Developed recreation sites, including Lonesome Beaver Campground, McMillan Spring Campground, Starr Springs Campground, Dandelion Flat Picnic Area, Hog Springs Picnic Area, Otter Creek Reservoir Recreation Sites, Kingston Canyon Recreation Site, and Koosharem Picnic Area
- VRM Class II portions of the following ACECs from mineral entry: Dirty Devil/North Wash ACEC, Fremont Gorge/Cockscomb ACEC, Badlands ACEC, Henry Mountains ACEC, Horseshoe Canyon ACEC, and Little Rockies ACEC.

The impacts would be the same as Alternative N, except that the total acreage of proposed new withdrawals would increase to 176,400 (this is in addition to the existing 154,700 acres of withdrawals). These withdrawals, if executed, would preclude any mining-related operations and development of minerals under the mining laws. This would result in a greater potential for impacts to mining-related operations than under Alternatives N, A, and the Proposed RMP. These recreation sites, WSRs, and ACECs are generally within areas with a moderate to high potential for the occurrence of locatable minerals. Valid existing rights would be recognized in withdrawn lands.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as described under Alternative N.

Wild and Scenic Rivers

All 12 eligible river segments (135 miles) would be recommended for suitability for inclusion in the National Wild and Scenic Rivers System and would be recommended for withdrawal from mineral entry, increasing the potential for impacts to locatable minerals over Alternatives N, A, and the Proposed RMP. Stream segments recommended for potential addition to the National Wild and Scenic Rivers System, which includes eligible rivers, would require a plan of operations. If a plan of operations is reviewed and approved under applicable federal laws and regulations, mitigation would be required to protect the outstandingly remarkable values of the eligible rivers consistent with a claimant's rights. These requirements would have adverse impacts by delaying the processing time and possibly reducing the feasibility of the proposal. Most of the eligible river segments are within areas that are rated as high potential for the occurrence of locatable minerals. There are no active, recorded mining claims within the eligible river segments.

Areas of Critical Environmental Concern

Sixteen ACECs would be designated. Table 4-59 includes a list of the ACECs and the acreage for each. The total acreage included in the potential ACECs would be 886,810 acres. These potential ACECs, in whole or part, would be withdrawn from mineral entry, and a withdrawal would preclude any mining-related activity and development of locatable minerals. If the above areas are designated as ACECs but not withdrawn, any proposed mining-related operation would require a plan of operations. As part of the review and approval of the plan of operations, mitigation would be required. As these ACECs are subject to NSO or closed to leasing under oil and gas, similar restrictions under the mining laws would not be consistent with a claimant's rights. NSO and closed to leasing are inconsistent with the claimant's right to occupy and use public land, reasonably incident to the mining laws. However, where consistent with claimant's rights, drilling and exploration sites and other facilities would be relocated and the critical resource(s) would be avoided. These requirements would likely result in delays due to processing time. Mining claims are actively recorded on lands within the potential Dirty Devil/North Wash, Henry Mountains, Badlands, Fremont Gorge/Cockscomb, Sevier Canyon, and Rainbow Hills ACECs. Most of these ACECs would be in areas designated as high potential for the occurrence of locatable minerals and include lands where mineral exploration and development have occurred in the past and would occur in the future depending on market conditions. This alternative would result in greater impacts than under Alternatives N, A, and the Proposed RMP, due to the increase in potential ACEC acreage.

Alternative D

Impacts from Cultural Resources

Impacts would be the same as described under Alternative N.

Impacts from Visual Resources

The types of impacts from management of visual resources would be similar to those described under Alternative N, except the VRM class designations for this alternative would be Class I, 1,129,600 acres (53% of the RFO); Class II, 66,700 acres (3%); Class III, 355,100 acres (17%); and Class IV, 576,600 acres (27%). VRM Class I areas outside of WSA boundaries include 682,600 acres. VRM Class I is the most restrictive class and allows for minimal or no change to the landscape. VRM Class II requires retention of the character of the landscape with a low level of change. This alternative would have the greatest impact on locatable minerals, as VRM Class I is increased by 60% compared to Alternative A, the Proposed RMP, and Alternative C, and VRM Class II is also increased compared to the other alternatives. This alternative would result in the greatest potential for necessary project modifications resulting in processing delays, additional costs, and possibly reducing the feasibility of proposals.

Impacts from Special Status Species

Impacts would be the same as described under Alternative C.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under this alternative, all 29 areas (682,600 acres) of non-WSA lands with wilderness characteristics would be recommended for withdrawal from entry under the mining laws. No exploration and development of locatable minerals could occur within these withdrawn lands. Due to increased acres of withdrawals, the potential for adverse impacts to mineral development would be greatest under this alternative. Valid existing rights would be recognized in withdrawn lands.

Impacts from Recreation

Impacts would be the same as those described under the Proposed RMP.

Impacts from Travel Management

The types of impacts experienced from travel management would be similar to those described under Alternative N, except there would be 1,155,200 acres designated as closed to motor vehicle use. The remainder of the RFO would be limited to designated routes. This alternative is the most restrictive to locatable minerals and would result in the greatest potential for impacts, such as processing delays and increased costs of development, throughout the RFO.

Impacts from Lands and Realty

Under this alternative, the following areas would be recommended for withdrawal from mineral entry:

- Rainbow Hills ACEC
- Old Woman Front ACEC
- All suitable wild and scenic rivers within one-quarter mile of the high water mark on each bank of the river segment
- All areas identified as non-WSA lands with wilderness characteristics
- Developed recreation sites, including Lonesome Beaver Campground, McMillan Spring Campground, Starr Springs Campground, Dandelion Flat Picnic Area, Hog Springs Picnic Area, Otter Creek Reservoir Recreation Sites, Kingston Canyon Recreation Site, and Koosharem Picnic Area
- VRM Class II portions of the following ACECs from mineral entry (see ACEC prescriptions for details): Dirty Devil/North Wash ACEC, Fremont Gorge/Cockscomb ACEC, Badlands ACEC, Henry Mountains ACEC, Horseshoe Canyon ACEC, and Little Rockies ACEC.

The impacts would be the same as described under Alternative N, except the total acreage proposed for new withdrawals would increase to 749,200; this is in addition to the 154,700 acres of existing withdrawals. This would be the most acres of proposed withdrawals of any of the alternatives, resulting in the greatest potential for adverse impacts. These withdrawals, if executed, would preclude any mining-related operations and development of minerals under the mining laws. These recreation sites, WSRs, and ACECs are generally within areas with a moderate to high potential for the occurrence of locatable minerals. Valid existing rights would be recognized.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as described under Alternative N.

Wild and Scenic Rivers

Impacts would be the same as described under Alternative C.

Areas of Critical Environmental Concern

The types of impacts would be the same as those described under Alternative C. However, ACEC management prescriptions under Alternative D include additional restrictions for non-WSA lands with wilderness characteristics, which would result in greater impacts to locatable minerals. This alternative is the most restrictive to locatable minerals.

4.4.6.3 Salable Minerals

Salable minerals are subject to disposal under the Act of July 31, 1947, which is commonly called the Materials Act. The BLM's policy is to make mineral materials available unless detrimental to the public

interest, to protect public land resources and the environment, and to minimize damage to public health and safety. Through land use planning, the BLM may designate public land as open or closed to disposals, and the open areas may be designated with special conditions. The designations of open, open with special conditions, and closed would follow the oil and gas leasing designations to the extent practicable. Open with special conditions would include the oil and gas open with minor constraints (timing or controlled surface use) and open with major constraints (NSO). The provisions for exceptions, modifications, and waivers would also apply to salable minerals.

Methods and Assumptions

The analysis for impacts to salable minerals assumes exploration and development would be regulated under the subject laws and regulations.

Environmental Consequences

The impacts to salable minerals would be similar to impacts to oil and gas exploration and development. However, under Alternative N, the oil and gas leasing restrictions do not apply to salable minerals. Operations for salable minerals do not involve the same operations as oil and gas; however, there are similarities in that exploration and development for salable and fluid minerals require use of public lands and result in disturbances related to that exploration and development. Exploration for salable minerals would include drilling with smaller drill rigs than generally used for oil and gas, testing by excavating trenches or pits, extracting bulk samples, and other activities that would involve surface disturbances. Production would involve surface mines or quarries and associated surface facilities, which would include roads and could include conveyors, crushers, screens, and other equipment. Generally, excavating and hauling equipment would remain onsite during production activities. Please see the oil and gas discussion on the differences between alternatives in leasing categories, and maps 2-34, 2-35, 2-36, 2-37 and 2-38.

Differences between impacts to salable mineral operations and to oil and gas operations would include:

- Timing restrictions could preclude development of a salable mineral resource. Construction and drilling of a well may be reasonably completed during the open season for oil and gas exploration and development. Once development is completed, maintenance of facilities for production can be accomplished by a reduced presence of humans and equipment during the restricted season. For salable minerals, production would involve excavating and removing mineral materials from a quarry or pit, the materials would usually be processed for use at the quarry, and that mineral product would be hauled from the site to a place of use. Production of mineral materials requires that humans and equipment be onsite during the restricted season; production cannot continue during a seasonally restricted period if humans and the necessary equipment are not in use. Operations for salable minerals may not be profitable if shut-downs are required for seasonal periods. Thus, a seasonal restriction could make a salable mineral operation unprofitable and could preclude development of the mineral material.
- CSU or distance buffers could preclude development of a salable mineral. A well site for oil and gas may be relocated, and the well may still be practically and feasibly drilled to a subsurface target, allowing for exploration and development of the oil and gas resources. However, moving a proposed salable mineral pit may preclude development of the mineral resource, if the targeted resource is not present or if mining or extraction is not practical or feasible at the relocated site.
- NSO may preclude development of a salable mineral. An oil and gas well may be practically and feasibly directionally drilled from a well pad that is not located vertically above the subsurface, and oil and gas may be produced by a directionally drilled well. However, NSO requirements for salable minerals would, in most cases, preclude mineral development, as the mineral resource would not be available for mining and extraction.

4.5 IMPACTS TO SPECIAL DESIGNATIONS

4.5.1 Wilderness Study Areas

Pursuant to FLPMA and BLM policy, WSAs are managed according to the IMP to protect their suitability for wilderness designation until such time as Congress acts on the BLM's recommendations. This analysis does not consider the impact of the IMP on other resources and resource uses or on the wilderness characteristics of the WSAs; that analysis was conducted in the Utah Statewide Wilderness FEIS (BLM 1990b).

WSAs would be managed pursuant to the non-impairment standard, and as such, the BLM cannot allow activities to occur within WSAs that would impair their suitability for preservation as wilderness. Therefore, significant impacts on WSAs (e.g., impairment) would not occur under any of the alternatives. Although impacts on natural resources within WSAs could occur from a variety of uses, they would be non-impairing and therefore would not result in long-term impacts to the wilderness characteristics of the WSAs.

There are 11 WSAs within the RFO totaling 446,900 acres. All except one are located east of Capitol Reef National Park. The Fremont Gorge WSA is located west of Capitol Reef National Park. All are located in Wayne County or Garfield County. The management of WSAs focuses on maintaining the wilderness characteristics of appearance of naturalness, outstanding opportunities for solitude, or primitive, unconfined recreation. Size and management guidelines have already been established for these areas.

Federal law and BLM policy require that WSAs be closed to oil and gas leasing. This management direction protects the wilderness characteristics of the WSAs, and the BLM has no discretion to direct otherwise through planning. Thus, the RMP makes only two management decisions specific to WSAs:

- VRM class designations (BLM policy requires that WSAs be designated as VRM Class I)
- Designation of each WSA as either closed or limited to off-highway vehicle use (as displayed in Table 4-55).

In addition, route designation decisions (which are implementation decisions) will also be analyzed in this PRMP/FEIS (as displayed in Table 4-55).

Table 4-55. OHV Area and Way Designations within WSAs

		Alternative N (No Action)	Alternative A	Proposed RMP	Alternatives C and D
OHV Area Designations	**Management Direction**	Continue current OHV designations (closed and limited) and allow vehicle use on identified ways. (Map 2-12)	Designate all WSAs as limited to OHV use and allow vehicle use on all designated ways. (Map 2-13)	Designate WSAs as either limited or closed to OHV use and allow vehicle use on identified ways. (Map 2-14)	Designate all WSAs as closed to OHV use and allow no vehicle use on inventoried ways. (Maps 2-15 and 2-16)
	Acres closed	187,000	0	175,300	446,900

		Alternative N (No Action)	Alternative A	Proposed RMP	Alternatives C and D
	Acres limited	259,900	446,900	271,600	0
OHV Route Designations	**Miles Accessible**	41.5 (Map 3-10)	51.6 (Map 2-17)	59.5 (Map 2-18)	0 (Maps 2-19 and 2-20)

Management actions that could impact these characteristics include managing for the presence or absence of ways and trails, use of motorized vehicles along these ways, construction of fences and other range or wildlife improvements, management of native vegetation communities, land tenure adjustments, or other actions that result in surface-disturbing activities.

Methods and Assumptions

The analysis is based on the following assumptions:

- Managing WSAs according to the IMP will protect wilderness characteristics of WSAs in a manner that will not "impair the suitability of such areas for preservation as wilderness" (FLPMA Section 603(c))
- Management actions that enhance biological or environmental characteristics would improve the wilderness quality and suitability of the WSAs.

Environmental Consequences

Impacts to WSAs could result from actions proposed under the following resource programs:

- Fire and Fuels Management
- Recreation
- Travel Management
- Lands and Realty.

Other programs were determined to have little or no impact on WSAs.

Alternative N: No Action

Impacts from Fire and Fuels Management

During and immediately after fire events, access to WSAs and enjoyment of opportunities for primitive recreation associated with them may be restricted or impaired. Full suppression of wildland fires in these areas may be implemented to control fire size and severity, protecting these opportunities. Wildfire suppression activities could result in short-term impacts, including disturbance to soils, surfaces, and groundwater; watershed functions; and vegetation conditions. Impacts would be minimized by post-fire rehabilitation efforts. There would also be impacts to solitude due to the presence of firefighters and equipment during fire events, but this would be short term. Appropriate management response within a WSA could limit the use of mechanical suppression activities or other techniques for reducing these impacts. Temporary disturbances may occur to resources and values; however, these effects would be short term while wilderness values are assessed on a long-term scale.

Long-term impacts associated with the use of an appropriate management response to wildfire suppression, wildland fire use, and the planned actions of prescribed fire and non-fire fuel treatments on WSAs are the decreased risk of large severe wildfire events and the overall improved ecological health. With the removal of hazardous fuels, a trend towards increasing the preservation of naturalness and

opportunities for primitive recreation would be in place. Because fire is a natural and necessary event in maintaining ecological health, a WSA's natural character would not only be protected but also likely enhanced.

Impacts from Recreation

Visitors may have outstanding opportunities for solitude or primitive and unconfined recreation when the sights, sounds, and evidence of other people are rare or infrequent; where visitors can be isolated, alone, or secluded from others; where the use of the area is by non-motorized, non-mechanical means; and where no or minimal developed recreation facilities are encountered. High concentrations of recreation users (large group sizes or frequent group encounters) would decrease outstanding opportunities for solitude in WSAs. Continued increases in non-motorized recreation users would reduce opportunities for solitude in those areas. Additionally, large numbers of recreationists in WSAs, especially in the narrow canyons associated with some of the WSAs, would increase the impact to campsites, decreasing the naturalness of WSAs in specific locations. Increasing use of campsites results in increased areas of compacted soils, reducing vegetation and creating unnatural openings in the vegetation. Human waste and trash also increases, especially when campsites are located in confined areas such as canyons.

Impacts from Travel Management

Use of motorized vehicles within WSAs could impact wilderness characteristics. Under Alternative N, some identified ways within the Mount Ellen—Blue Hills WSA and all of the Fremont Gorge, Horseshoe Canyon, Fiddler Butte, and French Springs WSAs would continue to be available for motor vehicle use on the designated way, which would temporarily impact solitude and opportunities for primitive recreation in areas adjacent to the ways. The rugged terrain of these areas has presented a barrier to vehicle intrusions in the past and would likely continue to do so in the future, although advancing vehicle technology could allow vehicles to enter and impact areas they have not been able to access in the past.

Impacts from Lands and Realty

Acquiring inholdings within WSAs would improve their manageability and preclude non-conforming uses on what are currently non-federal (state and private) lands. Lands within WSAs are not available for ROWs or disposal, precluding impacts to wilderness characteristics from these actions.

Alternative A

Impacts from Fire and Fuels Management

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

Under this alternative, the Dirty Devil SRMA would overlap the Dirty Devil, Horseshoe Canyon South, and French Spring/Happy Canyon WSAs. Managing the lands that surround the WSAs for semi-primitive recreation would complement WSA management. However, management under the IMP is usually more restrictive than SRMA prescriptions, so no additional benefit to wilderness characteristics would result from SRMA management.

Impacts from Travel Management

OHV use within WSAs could impact wilderness characteristics. OHV area and route designations by alternative are shown in Table 4-55. Under Alternative A, all WSAs would be designated as limited to OHV use, with 51.6 miles of ways designated as available for use, which is the most of any alternative. The potential impacts to naturalness and solitude from vehicle intrusions would be the greatest among the alternatives, because more ways would be designated than under any other alternative.

Impacts from Lands and Realty

Impacts would be the same as those described under Alternative N.

Proposed RMP

Impacts from Fire and Fuels Management

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

The Dirty Devil, Henry Mountains, and Capitol Reef Gateway SRMAs overlap the Dirty Devil, Horseshoe Canyon South, French Spring/Happy Canyon, Fremont Gorge, Mount Ellen—Blue Hills, Bull Mountain, Mount Pennell, and Mount Hillers WSAs. Managing the lands that surround the WSAs for semi-primitive motorized and non motorized recreation would complement WSA management. However, management under the IMP is usually more restrictive than SRMA prescriptions, so no additional benefit to wilderness characteristics would result from SRMA management.

Impacts from Travel Management

Use of OHVs within WSAs could impact wilderness characteristics, however this use is mitigated by the IMP wherein BLM would restrict or close use on routes that do not meet with non-impairment standards. OHV area and route designations for this alternative are shown in Table 4-55. Area designations under the Proposed RMP would be similar to Alternative N, but an additional 18 miles of ways would be designated as open to motor vehicle use, resulting in more potential impacts to wilderness characteristics than Alternatives N, C, and D but less than Alternative A.

Impacts from Lands and Realty

Impacts would be the same as those described under Alternative N.

Alternative C

Impacts from Fire and Fuels Management

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

Impacts would be the same as those described under Alternative N.

Impacts from Travel Management

Use of OHVs within WSAs could impact wilderness characteristics. OHV area and route designations by alternative are shown in Table 4-55. Under Alternative C, all WSAs would be closed to motorized use, which would eliminate any short-term impacts, thereby preserving opportunities for solitude and primitive recreation.

Impacts from Lands and Realty

Impacts would be the same as those described under Alternative N.

Alternative D

Impacts from Fire and Fuels Management

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

The types of impacts would be the same as those described under the Proposed RMP and Alternative C but would include more acres of WSAs and lands adjacent to the WSAs being included within SRMAs. The Dirty Devil, Henry Mountains, Capitol Reef Gateway, Labyrinth Canyon, and Little Rockies SRMAs would overlap with all 11 WSAs, complementing the management within those areas.

Impacts from Travel Management

Impacts would be the same as those described under Alternative C.

Impacts from Lands and Realty

Impacts would be the same as those described under Alternative N.

4.5.2 Wild and Scenic Rivers

This section discusses impacts to wild and scenic rivers (WSRs) that would occur from actions associated with the management of other resources. Analysis of impacts to WSRs is limited to the river segment corridor, which includes the viewshed within one-quarter mile of the high water mark on each bank of the river segment. In many cases, the corridor would be limited to the canyon in which the river segment is located.

The Wild and Scenic River Act includes three possible tentative classifications: "wild," "scenic," or "recreational." These classifications are based on the type and degree of human development associated with the river and the lands adjacent to the river corridor at the time of inventory. Tentative classification also dictates the types of activities and development allowed within the river corridor. "Wild" rivers are the most restrictive of the three classifications and are associated with rivers free of impoundments, generally are inaccessible except by trail, contain shorelines and watersheds that are essentially primitive, and have waters that are unpolluted. "Scenic" rivers are slightly less restrictive than "wild" rivers, accessibility to "scenic" rivers is generally easier and can include existing routes; however, "scenic" rivers are generally free of impoundments and contain shorelines and watersheds that are largely primitive and undeveloped. "Recreational" rivers have the least restrictions placed on them and include rivers that are readily accessible by roads, trails, or railroads; may have some development along their shorelines; and may have substantial evidence of human activity.

Outstandingly remarkable values and the criteria associated with each value are as follows:

- **Scenic.** Diversity of view, special features, seasonal variations, cultural modifications.
- **Fish.** Habitat quality, diversity of species, values of species, abundance of fish, natural reproduction, size and vigor of fish, quality of experience, cultural and historical importance, recreational importance, and access.
- **Recreational.** Length of season, diversity of use, flow, character of run, scenery and naturalness, access, level of use, associated opportunities, attraction, sites, and facilities.
- **Wildlife.** Habitat quality, diversity of species, abundance of species, natural reproduction, size and vigor of species, quality of experience, cultural and historic importance, recreational importance, and access.
- **Geologic.** Feature abundance, diversity of features, and educational or scenic.
- **Historic.** Significance, site integrity, education and interpretation, listing, and eligibility.
- **Cultural.** Significance, current uses, number of cultures, site integrity, educational and interpretation, listing, and eligibility.
- **Ecologic.** Species diversity, ecological function, rare communities, and educational and scientific.

Methods and Assumptions

The analysis of impacts to WSRs includes an evaluation of where management actions may be inconsistent with the tentative classification given to all eligible or suitable segments as well as potential impacts to the outstandingly remarkable values of any eligible or suitable segment. Impacts to the tentative classification of the segments for each alternative will be discussed first, followed by impacts associated with the segment's outstandingly remarkable values.

River segments determined to be eligible for further consideration in land use planning, along with their outstandingly remarkable values and tentative classification, are identified in Table 4-56. Details of the eligibility and classification process are included in Appendix 2.

Table 4-56. Wild and Scenic River Eligibility and Tentative Classification

River or River Segment		Outstandingly Remarkable Value(s)	Tentative Classification	Miles within WSA	BLM Miles	Total Miles
Dirty Devil Complex	Dirty Devil River	Scenic, recreation, geologic, fish and wildlife, and cultural	Wild	35	54	57
	Beaver Wash Canyon	Scenic and ecological	Wild	6.8	6.8	6.9
	Larry Canyon	Scenic, recreation, wildlife and ecological	Wild	4	4	4
	No Mans Canyon	Scenic, recreation, and cultural	Wild	7.1	7.1	7.1
	Robbers Roost Canyon	Scenic, recreation, historic, and cultural	Wild	28	31	33
	Sams Mesa Box Canyon	Scenic and wildlife	Wild	9.5	9.5	9.5
	Twin Corral Box Canyon	Scenic and wildlife	Wild	8	9	10
Fish Creek		Cultural	Scenic	0	0.25	0.25
Fremont River	Fremont Gorge	Scenic	Wild	0	5	6
	Capitol Reef National Park to Caineville Ditch Diversion	Scenic and geologic	Recreational	0	4	6
Maidenwater Creek		Scenic, recreation, geologic, fish and wildlife, and ecological	Scenic	0	3	4
Quitchupah Creek		Cultural	Recreational	0	1.4	1.4
Total				**98.4**	**135.05**	**145.15**

Suitability, the process of deciding which rivers to recommend for addition to the National Wild and Scenic River System, is part of the resource management planning process. The suitability process is described in Appendix 3. Suitability varies by alternative, as summarized in Table 4-57.

Table 4-57. Suitability Recommendations by Alternative

Alternative N	Alternative A	Proposed RMP	Alternative C	Alternative D
A suitability decision would not be made. All 12 eligible river segments (135 miles) would continue to be managed to protect their outstandingly remarkable values, free-flowing nature, and tentative classification.	No eligible river segments would be designated as suitable.	A 5 mile segment of the Fremont River in Fremont Gorge would be designated and managed as a suitable wild and scenic river. This segment would be managed to protect its outstandingly remarkable values, free flowing nature and tentative classification of wild	All 12 eligible river segments (135 miles) would be designated and managed as suitable WSRs. They would be managed to protect their outstandingly remarkable values, free-flowing nature, and tentative classification.	

Environmental Consequences

Impacts to the outstandingly remarkable values of the eligible WSRs could result from actions proposed under the following resource management programs:

- Vegetation and Fire and Fuels Management
- Cultural Resources
- Visual Resources
- Special Status Species and Fish and Wildlife
- Non-WSA Lands with Wilderness Characteristics
- Livestock Grazing
- Recreation
- Travel Management
- Lands and Realty
- Minerals and Energy
- Special Designations.

Other programs were determined to have little or no impact on WSRs.

Alternative N: No Action

Under this alternative, 12 segments, totaling 135 miles, have been identified as eligible for consideration for suitability and, as dictated by policy, would be managed to protect their free-flowing nature, outstandingly remarkable values, and tentative classification until such time as a suitability determination is made. Eight segments (126 miles) are tentatively classified as "wild," two segments (5 miles) are "recreational," and two segments (3 miles) are tentatively classified as "scenic."

Impacts from Vegetation and Fire and Fuels Management

Allowing for habitat restoration could result in evidence of human activity from surface disturbance along the 126 miles of segments tentatively classified as "wild"; however, these impacts would be short term in duration and would not likely result in a change to the tentative classifications. Performing land treatments to reduce soil loss and maintain vegetation structure would impact WSRs by assisting in maintaining plant diversity and preserving the ecological condition of the segments. Management actions

to maintain soil levels and vegetation cover, manage noxious weeds, and enhance wildlife habitat could have short-term impacts on wildlife, scenic, ecological, and recreational outstandingly remarkable values by removing vegetation and increasing the potential for erosion and sedimentation, visual intrusions, and loss of habitat; however, over the long term, such actions would likely increase age and species diversity of plant communities, which would improve or maintain these values.

Indirect protections from management of riparian areas would be provided to eligible river segments due to not allowing new surface disturbance within 500 feet of riparian-wetland areas. This would maintain the integrity of these areas and also provide indirect protections to many of the segments' outstandingly remarkable values, such as scenic and wildlife.

Impacts from Cultural Resources

Management actions associated with cultural resources would be compatible with all 135 miles identified as eligible for suitability because allowable activities and the degree of development within the river corridors would not change and future activities would be minimized or prohibited. In some instances, if inventories and collection were to occur within river corridors, short-term impacts could result from associated surface disturbance, particularly segments with "wild" classifications; however, over the long term, these impacts would not likely affect tentative classification of the segment. Law and policy guiding cultural resources management would provide indirect protection to those segments that contain cultural or historic outstandingly remarkable values by placing restrictions on surface-disturbing activities. Additionally, indirect effects from these restrictions could also occur to segments containing scenic, recreational, fish, wildlife, and ecological outstandingly remarkable values by providing additional protections within the management of these values. Allowing for inventories and collection within river corridors could potentially cause short-term impacts associated with surface-disturbing activities; however, over the long term, these impacts from associated mitigation measures would be negligible and, in some instances, may provide additional values to segments, particularly if a significant cultural resource was found.

Impacts from Visual Resources

Most of the eligible river segments would continue to be managed as VRM Class II. This requires that the existing character of the landscape be retained and allows only low-level changes to the landscape. This would minimize, but not eliminate, impacts from surface-disturbing activities to eligible WSRs where scenery was identified as the outstandingly remarkable value.

Impacts from Special Status Species and Fish and Wildlife

Management actions associated with SSS and fish and wildlife would be compatible with the tentative classifications of all 12 segments because allowable activities and the degree of development within the river corridor would not change and future activities would be minimized or prohibited. In some instances, short-term impacts could occur within "wild" segments from surface disturbance associated with habitat improvements from the increased potential for erosion and sedimentation impacting water quality and the natural character of the area. In some instances, these actions could also result in short-term impacts to the rivers' wildlife, fish, ecological, scenic, and recreational outstandingly remarkable values from any associated improvement or development actions; however, over the long term, these actions would likely assist in upholding the segment's outstandingly remarkable values by maintaining or improving habitat values.

Additionally, legal and policy requirements for protecting SSS habitats would protect eligible river segments where the SSS are the outstandingly remarkable value.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside WSAs are proposed under this alternative, resulting in no additional protection for WSR outstandingly remarkable values.

Impacts from Livestock Grazing

Proposed decisions to manage livestock grazing could have minor and localized effects on some outstandingly remarkable values. Most river segments are inaccessible to cattle and, although livestock grazing would be allowed within all eligible river corridors, impacts to the outstandingly remarkable scenic and recreational values would be minimal because management of livestock grazing is subject to the *Fundamentals of Rangeland Health*. However, there is a potential that certain rangeland improvements (e.g., fencing, water crossings) could be incompatible in some of the segments tentatively classified as "wild" from visual intrusions to the natural character of the area.

Impacts from Recreation

Under this alternative, there are no SRMAs; therefore, SRMA management would have no impact on eligible rivers.

Impacts from Travel Management

Off-highway vehicle use could impact outstandingly remarkable values and tentative classification of the eligible river segments. Under this alternative, some eligible WSR segments, including the Fremont River east of Capitol Reef National Park, Quitchupah Creek, Fish Creek, Maidenwater Creek, and the Dirty Devil River north and south of the Dirty Devil WSA, would continue to be open to cross-country OHV travel, leaving these areas vulnerable to vehicle intrusions that could adversely impact recreational, scenic, cultural, and wildlife outstandingly remarkable values. The rugged terrain in some of these areas has presented a barrier to vehicle intrusions in the past and would likely continue to do so in the future, although advancing vehicle technology could allow vehicles to enter—and affect—areas they have not been able to access in the past. Eligible river segments within WSAs would be closed or limit OHV use to existing identified routes, which would preclude or reduce threats to outstandingly remarkable values.

Impacts from Lands and Realty

No proposed actions from lands and realty would impact the tentative classification or outstandingly remarkable values of the eligible segments identified under this alternative because allowable lands and realty actions and the degree of development within the corridor would be minimized or prohibited due to BLM's policy of managing eligible river segments to protect their free-flowing nature, outstandingly remarkable values, and tentative classification. Thus, these river segments would be managed as ROW avoidance areas, which would provide additional protection to the outstandingly remarkable values of the segments by eliminating any surface disturbance or visual intrusions associated with such development actions.

Because the BLM has no control over potential modifications to a river's shoreline or any other type of development on non-public lands, impacts could occur in these areas. Land tenure adjustments that would result in the acquisition of non-BLM lands within these river corridors would provide opportunities to better manage outstandingly remarkable values and to mitigate any efforts that could impact the segments' tentative classification or free-flowing nature.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

There would be no impacts from oil and gas exploration and development to the outstandingly remarkable values of eligible river segments within WSAs (98 of the 135 total miles) because all WSAs are closed to

oil and gas leasing under all alternatives. The leasing categories of the 37 miles of eligible river segments outside WSAs (for all alternatives) are shown in Table 4-58.

Table 4-58. Oil and Gas Leasing in Eligible River Segments Outside WSAs

Eligible River Segment	Alternative N (No Action)	Alternative A	Proposed RMP	Alternatives C and D
Dirty Devil River North	Open subject to moderate constraints (timing limitation, CSU)	Open subject to standard terms and conditions	Open to leasing subject to major constraints (NSO)	Closed to leasing
Dirty Devil River South	Open subject to moderate constraints (timing limitation, CSU)	Open subject to standard terms and conditions	Open to leasing subject to major constraints (NSO)	Closed to leasing
Dirty Devil Tributaries Outside WSA	Open subject to standard terms and conditions	Open subject to standard terms and conditions	Open to leasing subject to major constraints (NSO)	Closed to leasing
Fremont Gorge	Open to leasing subject to major constraints (NSO)	Open subject to moderate constraints (timing limitation, CSU)	Open to leasing subject to major constraints (NSO)	Closed to leasing
Fremont River Below Capitol Reef National Park	Open subject to moderate constraints (timing limitation, CSU)	Open subject to moderate constraints (timing limitation, CSU)	Open subject to moderate constraints (timing limitation, CSU)	Closed to leasing
Fish Creek	Open to leasing subject to major constraints (NSO)	Open subject to moderate constraints (timing limitation, CSU)	Open subject to moderate constraints (timing limitation, CSU)	Open to leasing subject to major constraints (NSO)
Maidenwater Creek	Open subject to standard terms and conditions and closed to leasing	Open subject to standard terms and conditions	Open subject to moderate constraints (timing limitation, CSU)	Closed to leasing
Quitchupah Creek	Open subject to standard terms and conditions	Open subject to standard terms and conditions and open subject to moderate constraints (timing limitation, CSU)	Open subject to standard terms and conditions and open subject to moderate constraints (timing limitation, CSU)	Closed to leasing

Although portions of these river segments are open to oil and gas leasing with standard or minor stipulations under Alternative N, the oil and gas leasing stipulations for Alternative N (Appendix 11) also require NSO within 500 feet of each side of a perennial stream, which would help protect outstandingly

remarkable values. This would reduce the potential for surface-disturbing activities and their associated visual impacts. The remainder of the eligible river segments would be closed to leasing or open to leasing subject to major constraints (NSO), which would further protect outstandingly remarkable values. The potential for impacts to eligible river segments would be minor.

Leasable Minerals—Coal

No coal resources were identified within the eligible WSR corridors, except for Quitchupah Creek, which is located within the Emery coal field, where development is not expected before 2030. If coal resources were developed within the corridor, there would be potential for disturbance and impacts to the cultural values within that eligible segment.

Non-Energy Solid Leasable Minerals

Under this alternative, leasing within one-quarter mile of the high water mark on each bank of the river segment of eligible WSRs would be prohibited, so outstandingly remarkable values would be protected.

Locatable Minerals

While there could be potential impacts from mineral development to the outstandingly remarkable values of eligible rivers, the likelihood of mineral development within the eligible river corridors is small, given their remote location and lack of known mineralization. Impacts from mineral exploration and development would be mitigated by the requirement of federal regulations that a plan of operations be submitted for any operations causing surface disturbance greater than casual use in areas recommended for potential addition to the National Wild and Scenic River System.

Salable Minerals

Under this alternative, disposal of salable minerals within one-quarter mile of the high water mark on each bank of the river segment of eligible WSRs would be prohibited, so outstandingly remarkable values would be protected.

Impacts from Special Designations

Wilderness Study Areas

Nearly three-quarters of the eligible river miles (98 of the 135 total miles) are within WSAs, encompassing most of the Dirty Devil River and its side drainages. WSA management pursuant to the IMP would continue to have a beneficial impact on all outstandingly remarkable values within these segments by limiting development within these river corridors.

Wild and Scenic Rivers

No suitability determination would be made under Alternative N, and the outstandingly remarkable values of all eligible river segments would continue to be protected by policy until suitability determinations are made.

Areas of Critical Environmental Concern

Continued management of the Beaver Wash ACEC for its relict vegetation (closed to OHV use, closed to oil and gas leasing, unavailable for livestock grazing, acquisition of inholdings, and recommending for mineral withdrawal) would protect the ecological outstandingly remarkable value of the Beaver Wash eligible river segment. Continued management of the other three existing ACECs would have no impact on the other eligible river segments because no segments are located within those ACECs.

Alternative A

Impacts from Vegetation and Fire and Fuels Management

Under Alternative A, maximum treatment acreage limits would be set (averaging 73,600 acres annually for all treatments). No target (maximum or minimum) treatment acreage limits would be set under Alternative N. It is therefore likely that in some years, fewer acres would be treated under that alternative; however, in other years (when there are numerous wildland fires) more acres could be treated because the 2005 Land Use Plan Amendment for Fire and Fuels Management allows the full range of fire and fuels management actions to achieve ecosystem sustainability.

Under this alternative, no river segments would be recommended as suitable, which means that outstandingly remarkable values would not necessarily be protected. However, if these treatments were to occur in eligible WSR corridors, the types of impacts experienced would be similar to those described under Alternative N.

Impacts from Cultural Resources

Impacts would be the same as those described under Alternative N.

Impacts from Visual Resources

The impacts on outstandingly remarkable values of the eligible rivers would depend on the VRM classification of the lands within the river corridor. The eligible river segments within WSAs (98 of the 135 total miles) would be designated as VRM Class I, which would protect the scenic outstandingly remarkable values. River segments outside WSAs where scenery was identified as an outstandingly remarkable value (Dirty Devil and tributaries outside WSA, Fremont Gorge, Fremont River below Capitol Reef National Park, and Maidenwater Creek) would be designated as VRM Classes III or IV because no river segments would be recommended as suitable and no special management to protect outstandingly remarkable values is proposed under this alternative. Thus, management activities that could adversely impact the scenic values could occur in these river corridors.

Impacts from Special Status Species and Fish and Wildlife

Impacts would be similar to those described under Alternative N, with the exception of the 37 miles of river segments outside WSAs. However, legal and policy requirements for protecting SSS habitats would protect eligible river segments where the habitat overlaps a river segment.

Allowing for habitat restoration could result in evidence of human activity from surface disturbance along the 126 miles of segments tentatively classified as “wild”; however, these impacts would be short term in duration and would not likely result in a change to the tentative classifications. Management actions to enhance wildlife habitat could have short-term impacts on wildlife, scenic, ecological, and recreational outstandingly remarkable values by removing vegetation and increasing the potential for erosion and sedimentation, visual intrusions, and loss of habitat; however, over the long term, such actions would likely increase age and species diversity of plant communities, which would improve or maintain these values.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside WSAs are proposed under this alternative, resulting in no additional protection for WSR outstandingly remarkable values.

Impacts from Livestock Grazing

Impacts would be similar to those described under Alternative N. Providing no protective management for outstandingly remarkable values would allow more potential for certain rangeland improvements and associated surface disturbance, which could affect outstandingly remarkable values.

Impacts from Recreation

Proposed decisions to identify SRMAs could impact outstandingly remarkable values. Under Alternative A, management direction for the proposed Dirty Devil SRMA would complement the recreational outstandingly remarkable value identified in the eligible Dirty Devil River segment and several of its tributary segments because of the emphasis on providing primitive and semi-primitive recreation opportunities.

Proposed decisions to establish the Factory Butte SRMA with emphasis on motorized recreation could potentially impact outstandingly remarkable values of the eligible Fremont River segment from Capitol Reef National Park to the Caineville Diversion. Management for cross-country OHV use could result in surface disturbances and impacts, such as crushing vegetation, compacting soil, and contrasts in visual components within the river corridor, thus impacting the outstandingly remarkable values of this eligible river segment.

No other proposed SRMAs would overlap with eligible WSR segments under this alternative.

Impacts from Travel Management

OHV use could impact outstandingly remarkable values. Within most of the eligible river corridors, OHVs would be limited to designated routes, reducing impacts relative to Alternative N. Fremont Gorge would be open to cross-country OHV use, although the ruggedness of the gorge would prevent most vehicles from entering the area. The Fremont River from Capitol Reef National Park to the Caineville Ditch Diversion would remain open to cross-country OHV use. Terrain would limit motorized access in some locations. However, cross-country OHV use could result in surface disturbance, so impacts to outstandingly remarkable values could occur. Eligible river segments within WSAs would not be affected by OHVs.

Impacts from Lands and Realty

Under Alternative A, none of the eligible river segments would be recommended as suitable or managed to protect their free-flowing nature, outstandingly remarkable values, and tentative classification. The eligible river segments would not be included in withdrawals or ROW avoidance areas, which could result in proposals for surface-disturbing activities within some of the eligible river corridors such as development of ROWs or mining-related activities. These areas could be disposed of under a land tenure adjustment (removing land from management under federal laws and regulations), and inholdings could be acquired (which would bring lands under federal jurisdiction, subject to management under federal laws and regulations). There would continue to be protection from lands and realty actions for 98 of the 135 eligible river miles located within WSAs. The potential for impacts to the remaining 37 miles would be dependent on future proposals. This alternative would provide the least protection for the eligible river segments and, as discussed above, could result in impacts to the outstandingly remarkable values from development of ROWs or other land use actions, as well as development of lands if disposed from public ownership.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

This alternative would allow the greatest impacts from oil and gas leasing among all of the alternatives because all eligible segments outside WSAs (37 miles) would be open to leasing under standard terms or controlled surface use or timing stipulations. However, all eligible river segments except Quitchupah Creek are within an area identified as having low potential for oil and gas development. (Quitchupah Creek is located within an area identified as having moderate potential for gas development.) Because development of oil and gas within these areas is unlikely in the next 15 years, the possibility of such development impacting outstandingly remarkable values of any eligible river is minimal.

Leasable Minerals—Coal

Impacts would be the same as those described under Alternative N.

Non-Energy Solid Leasable Minerals

The 98 miles of eligible river segments located within WSAs would be closed to leasing, indirectly providing protection of the outstandingly remarkable values for those areas. There would be potential for leasing and development within the remaining 37 miles of eligible rivers, which could result in surface-disturbing activities within those corridors. This alternative would result in the least protection for the eligible river segments.

Locatable Minerals

There could be potential impacts from mineral exploration and development to the outstandingly remarkable values of eligible rivers as portions of the segments have a high potential for locatable minerals and no eligible rivers would be recommended as suitable in this alternative. There has been increasing interest in uranium adjacent to the Dirty Devil River corridor in the vicinity of Poison Spring and North Hatch Canyons, which could result in increased mineral-related traffic on the existing road that crosses the river. The 98 miles of eligible river segments located within the WSAs would be subject to the standards of 43 CFR 3802 and the IMP, which do not allow for impairment to the suitability for inclusion in the Wilderness Preservation System and thus would protect outstandingly remarkable values in these areas. This alternative would result in the least protection for the eligible river segments from locatable mineral exploration and development.

Salable Minerals

Proposed operations for salable minerals are subject to the oil and gas leasing restrictions. Live water would be protected by a buffer of 330 feet, subject to an appropriate exception when there are no practical alternatives and impacts can be fully mitigated. Outstandingly remarkable values would be protected by mitigation to stabilize soil, to prevent unnecessary erosion, and to revegetate disturbed surfaces.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

No eligible river segments would be recommended as suitable under Alternative A, and the outstandingly remarkable values would receive no special management. Other proposed decisions in this alternative could allow adverse impacts to eligible river segments outside the WSAs, as discussed in other sections of this WSR analysis.

Areas of Critical Environmental Concern

No ACECs are proposed under this alternative, so there would be no protection of outstandingly remarkable values from ACEC designation and management.

Proposed RMP

Impacts from Vegetation and Fire and Fuels Management

Impacts would be similar to those described under Alternative A, except within the one river segment (5 miles) recommended for suitability. This river segment (Fremont Gorge) would be managed to protect the outstandingly remarkable values. Proposed treatments in this area would only be allowed if it was determined that they would not result in impacts to the suitability or tentative classification of the river segments.

Impacts from Cultural Resources

Impacts would be the same as those described under Alternative N.

Impacts from Visual Resources

The impacts on the outstandingly remarkable values of the eligible rivers not recommended suitable would depend on the VRM classification of the lands within the river corridor. The eligible river segments within WSAs (98 of the total 135 miles) would be designated as VRM Class I, which would directly protect the scenic, as well as indirectly protect the other outstandingly remarkable values. River segments outside WSAs would be designated as VRM Class II, which would retain the character of the existing landscape. This would minimize, but not eliminate, possible impacts to the scenic, as well as the other, outstandingly remarkable values in these river segments.

The five mile segment of the Fremont River in Fremont Gorge managed as a suitable wild and scenic river would be designated as VRM Class II. This VRM classification would retain the character of the existing landscape and complement the management objectives for this river segment.

Impacts from Special Status Species and Fish and Wildlife

Impacts would be similar to those described under Alternative A, except that one river segment (5 miles) would be recommended as suitable under the Proposed RMP, which would ensure protection of the outstandingly remarkable values in that segment.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under the Proposed RMP, no suitable river segments are included in non-WSA lands being managed for the protection of wilderness characteristics. Under the Proposed RMP, 4 miles of eligible wild and scenic river segments would be included within non-WSA areas managed to maintain wilderness characteristics. The Little Rockies non-WSA area would include a portion of the Maidenwater Creek eligible river segment and the Red Desert non-WSA area would include a portion of the Fremont River – Capitol Reef NP to Caineville Diversion river segment. The prescriptions to maintain wilderness characteristics would provide indirect protection to the outstandingly remarkable values and tentative classifications along these river miles.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

Proposed decisions to establish SRMAs could impact outstandingly remarkable values. Management direction under the Proposed RMP for the Capitol Reef Gateway SRMA would complement the tentative

wild classification of the Fremont Gorge suitable WSR because of the emphasis on providing primitive and semi-primitive recreation opportunities.

Management direction for the Dirty Devil and Henry Mountains SRMAs would complement the recreational outstandingly remarkable values identified in the eligible Dirty Devil River segment, several of the Dirty Devil River tributary segments, and Maidenwater Creek because of the emphasis on providing primitive and semi-primitive recreation opportunities. No other proposed SRMAs would overlap with eligible WSR segments in the Proposed RMP.

Impacts from Travel Management

OHV use can impact outstandingly remarkable values. Under the Proposed RMP, the one river segment designated as a suitable wild and scenic river (Fremont Gorge – 5 miles), tentative classification of wild, would be closed to OHVs. This OHV designation would preclude impacts from motorized use.

The eligible segments not recommended for suitability in the Proposed RMP, within WSAs (the Dirty Devil tributaries) would also be closed to vehicle use. Other eligible segments would be within areas where OHVs would be limited to designated routes, so impacts would be confined to designated routes. Thus, outstandingly remarkable values would not likely be adversely impacted by OHV use under the Proposed RMP.

Impacts from Lands and Realty

Impacts would be similar to Alternative A, except that only 32 miles of eligible river segments (which are not recommended as suitable or not within WSAs) would be unprotected and at risk from potential surface-disturbing activities. Under the Proposed RMP, decisions for lands and realty would complement the management and protection for the one river segment (5 miles) recommended for suitability. These river segments would be recommended for withdrawal from mineral entry, managed as ROW avoidance areas, and no wind and solar energy development would be allowed. This would provide additional protection to the outstandingly remarkable values of the segments by eliminating any surface disturbance or visual intrusions associated with such development actions. All or the majority of the Beaver Wash Canyon, Larry Canyon, No Man's Canyon, Dirty Devil River, Robbers Roost Canyon, Sams Mesa Box Canyon, and Twin Corral Box Canyon eligible segments (98 of 121 miles) are located within WSAs and would continue to be protected by IMP management.

Because the BLM has no control over potential modifications to a river's shoreline or any other type of development on non-public lands, impacts could occur in these areas. Management actions to acquire non-BLM lands within the river corridors would provide opportunities to better manage outstandingly remarkable values and to prevent any actions that could impact the segments' tentative classification or free-flowing nature.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

The Proposed RMP would reduce the level of impact compared to Alternative A by recommending 1 river segment (5 miles; tentative classification "wild") as suitable and managing the river corridor as closed to oil and gas leasing. All remaining eligible river segments, except Quitchupah Creek, are within an area identified as having a low activity level (low development potential) for oil and gas. Quitchupah Creek is located in an area identified as having moderate activity (moderate development potential) for oil and gas. River segments not recommended as suitable within WSAs would continue to be protected by the IMP.

Leasable Minerals—Coal

Impacts would be the same as those described under Alternative N.

Non-Energy Solid Leasable Minerals

Under the Proposed RMP, leasing within one-quarter mile of the high water mark on each bank of the river segment of suitable WSRs would be prohibited, so outstandingly remarkable values would be protected in the Fremont Gorge (5 miles; tentative classification "wild"). In addition, no surface disturbance would be allowed within the 100-year floodplain or 330 feet of riparian areas, subject to an appropriate exception when there are no practical alternatives and impacts can be fully mitigated. It is important to note that of the remaining segments, 98 miles are within WSAs (which are closed to leasing), leaving 32 miles on which ground-disturbing activities could potentially impact outstandingly remarkable values. This alternative would provide less protection to outstandingly remarkable values than Alternatives N, C, or D but would provide more protection than Alternative A.

Locatable Minerals

While there could be potential impacts from mineral development to the outstandingly remarkable values of eligible rivers, the likelihood of mineral development within the eligible river corridors is small given their remote location and lack of known mineral deposits. Under this alternative, one suitable WSR corridor (Fremont Gorge, 5 miles; tentative classification "wild") would be recommended for withdrawal from mineral entry, precluding new mining claims in these areas. Impacts from mineral exploration and development would be mitigated by the requirement of federal regulations that a plan of operations be submitted for any operations causing surface disturbance greater than casual use in areas designated for potential addition to the National Wild and Scenic River System.

Salable Minerals

Under the Proposed RMP, disposal of salable minerals within one-quarter mile of the high water mark on each bank of the river segment of suitable WSRs would be prohibited, so the outstandingly remarkable values of the Fremont Gorge (5 miles; tentative classification "wild") would be protected. In addition, no surface disturbance would be allowed within the 100-year floodplain or 330 feet of riparian areas, subject to an appropriate exception when there are no practical alternatives and impacts can be fully mitigated. It is important to note that of the remaining segments, 98 miles are within WSAs, which are closed to disposal of salable minerals. This alternative would provide less protection to outstandingly remarkable values than Alternatives N, C, or D but more protection than Alternative A.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Under this alternative, the Fremont Gorge eligible river segment would be recommended as suitable with a tentative classification of "wild" and would be managed to protect its outstandingly remarkable values. Additionally, this river segment would be recommended for withdrawal from mineral entry and identified as an ROW avoidance area, protecting the outstandingly remarkable values from these types of surface-disturbing activities.

The remaining eligible segments are recommended non-suitable because the values identified would be protected by alternative protection methods. Outstandingly remarkable values within these other eligible segments would be managed according to management direction contained elsewhere in this RMP. All or

the majority of the Beaver Wash Canyon, Larry Canyon, No Man's Canyon, Dirty Devil River, Robbers Roost Canyon, Sams Mesa Box Canyon and Twin Corral Box Canyon eligible segments (98 of 130 miles) are located within WSAs and would continue to be protected by IMP management. The 32 miles of eligible rivers not recommended for suitability located outside the WSAs would receive protection through existing laws, regulations and specific resource decisions within the Proposed RMP for Riparian, VRM, non-WSA lands with wilderness characteristics, SRMAs and Travel Management. Those protections are discussed in more detail within those resource sections of this analysis and the Wild and Scenic River Suitability Evaluation Report (Appendix 3).

Areas of Critical Environmental Concern

ACEC designations in this alternative do not overlap any eligible WSR segments, so there would be no impacts to outstandingly remarkable values from ACEC management.

Alternative C

Impacts from Vegetation and Fire and Fuels Management

There would be no impacts to WSRs under this alternative, as all 12 eligible river segments would be recommended as suitable for inclusion in the National Wild and Scenic River System. Proposed treatments in these areas would only be allowed if it was determined that they would not result in impacts to the suitability, tentative classification, or outstandingly remarkable values of the river segment.

Impacts from Cultural Resources

Impacts would be the same as those described under Alternative N.

Impacts from Visual Resources

The impacts on outstandingly remarkable values of the eligible rivers would depend on the VRM classification of the lands within the river corridor. The eligible river segments within WSAs (98 of the total 135 miles) would be designated as VRM Class I, which would protect the scenic, as well as the other outstandingly remarkable values. River segments outside WSAs would be managed as VRM Class II, which would retain the character of the existing landscape. This would minimize, but not eliminate, possible impacts to the scenic outstandingly remarkable values and would indirectly provide protection of other outstandingly remarkable values for these river segments.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative N.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside WSAs are proposed under this alternative, resulting in no additional protection for WSR outstandingly remarkable values.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

Impacts would be the same as those described under the Proposed RMP.

Impacts from Travel Management

All 12 eligible WSR segments (135 miles) would be designated as suitable under this alternative, and all would be closed to motorized vehicles except for the Poison Spring Road, which is a maintained road that

crosses the Dirty Devil River segment and provides the only access to this river segment. By closing the other suitable rivers to OHV use, there would be no impact to outstandingly remarkable values or tentative classification under this alternative.

Impacts from Lands and Realty

Impacts would be similar to those described under the Proposed RMP, except that all 12 recommended suitable river segments (135 miles) would be recommended for withdrawal from mineral entry, managed as ROW avoidance areas, and not considered for wind and solar energy development. This alternative (along with Alternative D) would result in the greatest protection to river segments from lands and realty decisions.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Under this alternative, all 12 eligible rivers would be recommended as suitable, and all would be closed to oil and gas leasing. However, Fish Creek is located in an area identified as having low potential for gas development, so development of oil and gas is unlikely in the next 15 years. Consequently, the possibility of such development impacting outstandingly remarkable values of this river is minimal.

Leasable Minerals—Coal

Impacts would be the same as those described under Alternative N.

Non-Energy Solid Leasable Minerals

Under this alternative, leasing within one-quarter mile of the high water mark on each bank of the river segment of suitable WSRs would be prohibited, so outstandingly remarkable values would be protected in all 12 of the eligible rivers (135 miles).

Locatable Minerals

Under this alternative, the 12 suitable WSR corridors would be recommended for withdrawal from mineral entry, precluding new mining claims in these areas. Impacts from mineral exploration and development would be mitigated by the requirement of federal regulations that a plan of operations be submitted for any operations causing surface disturbance greater than casual use in areas designated for potential addition to the National Wild and Scenic River System. The likelihood of mineral development within the suitable river corridors is small given their remote location and lack of known mineralization. Therefore, the potential for impacts from locatable minerals would be minimal.

Salable Minerals

Under this alternative, disposal of salable minerals within one-quarter mile of the high water mark on each bank of the river segment of suitable WSRs would be prohibited, so outstandingly remarkable values would be protected in all 12 rivers.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

All eligible river segments would be recommended as suitable under this alternative and would be managed to protect their outstandingly remarkable values. Management of these river segments (including closing to OHV use, closing to oil and gas leasing, recommending for withdrawal from mineral

entry, closing to forest and woodland products harvesting, and managing as ROW avoidance areas) would protect their outstandingly remarkable values. This alternative (along with Alternative D) would best protect the eligible river segments.

Areas of Critical Environmental Concern

Under this alternative, all suitable WSR segments would be within potential ACECs. Managing the ACECs to protect relevant and important values would likely protect outstandingly remarkable values within the eligible river corridors as well, because they are often the same or similar values. This alternative (along with Alternative D) would best protect the eligible river segments.

Alternative D

Impacts from Vegetation and Fire and Fuels Management

Impacts would be the same as those described under Alternative C.

Impacts from Cultural Resources

Impacts would be the same as those described under Alternative N.

Impacts from Visual Resources

The impacts on outstandingly remarkable values of the eligible rivers would depend on the VRM classification of the lands within the river corridor. The eligible river segments within WSAs (98 of the total 135 miles) would be designated as VRM Class I, which would protect the scenic, as well as the other outstandingly remarkable values. River segments outside WSAs but within wilderness characteristic lands (33.35 miles of the Dirty Devil and tributaries outside WSA, Fremont Gorge, Fremont River below Capitol Reef National Park, and Maidenwater Creek) would also be designated as VRM Class I. There would be 0.74 miles of the Fremont River (Capitol Reef National Park to Caineville) and 1.6 miles of Maidenwater Creek designated as VRM Class II, which would also protect outstandingly remarkable values. The potential for impacts to the outstandingly remarkable values would be greatest in the 0.1 mile of the Fremont River (Fremont Gorge) designated as VRM Class III and the 0.25 miles of Fish Creek and 1.4 miles of Quitchupah Creek designated as VRM Class IV, which would allow modifications to the landscape and impact outstandingly remarkable values. However, with only 1.75 miles within these VRM designations, the potential for impacts to the outstandingly remarkable values and tentative classification would be minor.

Impacts from Special Status Species and Fish and Wildlife

Impacts would be the same as those described under Alternative N.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under Alternative D, 10,500 acres (33.35 miles) of suitable WSR segments would be included within the non-WSA areas managed to protect wilderness characteristics. Because the wilderness characteristics prescriptions are more restrictive than the WSR prescriptions, (e.g., VRM Class I versus VRM Class II), the eligible segments overlapping non-WSA lands with wilderness characteristics would be afforded a measure of additional protection over that provided in Alternative C.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

Impacts would be the same as those described under the Proposed RMP.

Impacts from Travel Management

Impacts would be similar to those described under Alternative C, except that management for protection of non-WSA lands with wilderness characteristics would result in 33.85 additional miles of suitable wild and scenic river segments being closed to OHV use. This would provide additional protection for outstandingly remarkable values in these segments.

Impacts from Lands and Realty

Impacts would be similar to those described under Alternative C, except additional acres would be managed for the protection of non-WSA lands with wilderness characteristics, which would provide additional protection for outstandingly remarkable values in overlapping WSR segments.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Impacts would be similar to those described under Alternative C, except additional acres would be managed for the protection of non-WSA lands with wilderness characteristics, which would provide additional protection for outstandingly remarkable values in overlapping WSR segments.

Leasable Minerals—Coal

Impacts would be similar to those described under Alternative N, except additional acres would be managed for the protection of non-WSA lands with wilderness characteristics, which would provide additional protection for outstandingly remarkable values in overlapping WSR segments.

Non-Energy Solid Leasable Minerals

Impacts would be similar to those described under Alternative C, except additional acres would be managed for the protection of non-WSA lands with wilderness characteristics, which would provide additional protection for outstandingly remarkable values in overlapping WSR segments.

Locatable Minerals

Impacts would be the same as those described under Alternative C.

Salable Minerals

Impacts would be similar to those described under Alternative C, except additional acres would be managed for the protection of non-WSA lands with wilderness characteristics, which would provide additional protection for outstandingly remarkable values in overlapping WSR segments.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Impacts would be the same as those described under Alternative C.

Areas of Critical Environmental Concern

Impacts would be the same as those described under Alternative C.

4.5.3 Areas of Critical Environmental Concern

An ACEC is an administrative designation assigned by BLM for "areas within the public lands where special management attention is required." FLPMA defines an ACEC as an area…

> "…within the public lands where special management attention is required (when such areas are developed or used, or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and provide safety from natural hazards." (FLPMA Section 103(a))

This analysis identifies the effects of management decisions on the BLM's ability to protect against and prevent irreparable damage to the relevant and important values associated with each potential ACEC across the alternatives. Protection of relevant and important values can occur as a result of management associated with designating ACECs, management associated with other special designations (e.g., WSAs and WSRs), general management of public lands (VRM class designations, restrictions on wildlife habitat, SSS management, SRMAs), or through geographic or topographic characteristics. The most restrictive management that protects an area with relevant and important values will be the focus of the analysis. Analysis of less restrictive management that would not provide additional protection to a relevant and important value will not be addressed. For example, if part of an ACEC with scenic relevant and important values threatened by oil and gas development overlaps a WSA, the WSA management would eliminate the threat of irreparable damage. Therefore, the analysis would not address the impacts of ACEC management for those portions of the ACEC within the WSA. The BLM has separate policies and guidelines as well as criteria for establishing ACECs and WSAs. The differing criteria make it possible that the same acreages will quality as both an ACEC and a WSA but for different reasons.

In concert with BLM guidelines, the impact analysis considers management actions that "defend or guard against damage or loss" to the relevant and important values. This includes damaged values that can be restored over time as well as those that are irreparable. The management actions associated with the alternatives could either degrade or protect the relevant and important values and either cause or prevent irreparable damage to such values.

Table 4-59 lists the existing ACECs, as well as potential ACECs, by alternative.

Table 4-59. Existing and Potential Areas of Critical Environmental Concern

ACEC	Relevant and Important Values	Alternative N (Existing ACECs)	Alternative A	Proposed RMP	Alternatives C and D	% in WSAs
Existing ACECs						
North Caineville Mesa ACEC	Relict vegetation	2,200 acres	0 acres	2,200 acres	(Within Badlands ACEC)	0
South Caineville Mesa ACEC	Relict vegetation	4,100 acres	0 acres	0 acres	(Within Badlands ACEC)	100%
Gilbert Badlands RNA	Badlands geology	3,680 acres	0 acres	0 acres	(Within Badlands ACEC)	100%

ACEC	Relevant and Important Values	Alternative N (Existing ACECs)	Alternative A	Proposed RMP	Alternatives C and D	% in WSAs
Beaver Wash ACEC	Desert riparian ecosystem	4,800 acres	0 acres	0 acres	(Within Dirty Devil/North Wash ACEC)	99%
Potential ACECs						
Badlands RNA	Scenic, SSS, Natural Processes, Riparian, Relict Vegetation	0 acres	0 acres	0 acres	88,900 acres	46%
Bull Creek	Archaeological	0 acres	0 acres	0 acres	4,800 aces	0
Dirty Devil/North Wash	Scenic, Cultural, Paleontological, Wildlife, SSS	0 acres	0 acres	0 acres	205,300 acres	64%
Fremont Gorge/ Cockscomb	Cultural, Scenic, Riparian, Plant, Wildlife	0 acres	0 acres	0 acres	34,300 acres	8%
Henry Mountains	Scenic, Bison habitat, Mule deer habitat, SSS, Ecological	0 acres	0 acres	0 acres	288,200 acres	45%
Horseshoe Canyon	Scenic, Cultural, Riparian, SSS	0 acres	0 acres	0 acres	40,900 acres	92%
Kingston Canyon	Mule deer habitat	0 acres	0 acres	0 acres	22,100 acres	0
Little Rockies	Scenic, Desert Bighorn Sheep, SSS	0 acres	0 acres	0 acres	49,200 acres	76%
Lower Muddy Creek	Scenic, Riparian, SSS	0 acres	0 acres	0 acres	16,200 acres	0
Old Woman Front RNA	Relict Vegetation	0 acres	0 acres	330 acres	330 acres	0
Parker Mountain	Sagebrush Steppe, Sage-grouse, Utah prairie dog, Pygmy rabbit	0 acres	0 acres	0 acres	107,900 acres	0
Quitchupah	Archaeological, Native American, Riparian	0 acres	0 acres	0 acres	180 acres	0
Rainbow Hills	Mule deer, Natural system, SSS	0 acres	0 acres	0 acres	4,000 acres	0

ACEC	Relevant and Important Values	Alternative N (Existing ACECs)	Alternative A	Proposed RMP	Alternatives C and D	% in WSAs
Sevier Canyon	Mule deer, Riparian, SSS	0 acres	0 acres	0 acres	8,900 acres	0
Special Status Species	SSS	0 acres	0 acres	0 acres	15,100 acres	0
Thousand Lakes Bench	Cultural, SSS, Riparian	0 acres	0 acres	0 acres	500 acres	0
Total		**14,780 acres**	**0 acres**	**2,530 acres**	**886,810 acres**	

Methods and Assumptions

This analysis is based on the following assumption:

- Although management decisions for most resources and resource uses have RFO-wide application, ACEC management prescriptions apply only to those lands within each specific ACEC, as outlined.

Environmental Consequences

Relevant and important values identified for the ACECs and impacts to those values vary based upon the individual ACEC because the relevant and important values vary by ACEC. Thus, the discussion of impacts will be different for each ACEC. Table 4-59 identifies the relevant and important values for each ACEC.

This section is structured by ACEC, then by alternative. The ACECs are organized in the order that they appear in Chapter 2.

4.5.3.1 Existing ACECs

North Caineville Mesa ACEC

The North Caineville Mesa ACEC encompasses 2,200 acres. None of this ACEC is located within a WSA. The relevant and important value is the relict vegetation found on top of the mesa. Impacts to the relevant and important value of this ACEC could occur from the following resource management programs:

- Visual Resources
- Livestock Grazing
- Travel Management
- Lands and Realty
- Minerals and Energy
- Special Designations

Other programs were determined to have little or no impact on the relict vegetation of this ACEC. There are no WSA or WSR decisions that would impact North Caineville Mesa ACEC.

Alternative N: No Action

Impacts from Visual Resources

Scenery is not a relevant or important value of this ACEC. However, under this alternative, the ACEC is managed to meet VRM Class II objectives. This would retain the existing character of the landscape by restricting surface-disturbing activities and would provide protection to the relict vegetation on the mesa.

Impacts from Livestock Grazing

The North Caineville Mesa ACEC is unavailable for grazing. This management prescription provides protection for the relict plant community relevant and important value within this ACEC.

Impacts from Travel Management

The ACEC is closed to OHV use under this alternative, which would provide protection to the relevant and important value from this type of use.

Impacts from Lands and Realty

Under this alternative, the North Caineville Mesa ACEC would be recommended for mineral withdrawal and would be protected from locatable mineral surface disturbance. In addition, land acquisitions to acquire non-federal inholdings from willing sellers would be pursued. Both of these management actions would help to protect the ACEC's relevant and important value.

Impacts from Minerals and Energy

The ACEC is open to oil and gas leasing with NSO. This would protect the relevant and important value from surface disturbance. The ACEC would be recommended for mineral withdrawal and would be protected from locatable mineral surface disturbance. Additionally, the ACEC would be considered for withdrawal from consideration for coal development in subsequent coal planning efforts and therefore would be protected from coal mining surface disturbance.

Impacts from Special Designations

Areas of Critical Environmental Concern

The North Caineville Mesa ACEC is managed to protect its relevant and important relict vegetation community located on top of a mesa. The area would continue to be managed for the protection of its relevant and important value.

Alternative A

Impacts from Visual Resources

Under this alternative, the area would be designated as VRM Class IV. Areas designated as VRM Class IV would be subject to actions that allow for greater landscape modification and therefore greater surface disturbance. These areas could be subject to such actions as complete vegetation removal, which would drastically alter (at least in the short term) the relict vegetation on the mesa.

Impacts from Livestock Grazing

Under this alternative, the area would be available for livestock grazing, so the relict vegetation would be grazed by domestic livestock. However, management of livestock grazing in accordance with the RHS would minimize impacts to the relict plant community on North Caineville Mesa.

Impacts from Travel Management

The North Caineville Mesa area would be designated as open to OHV use under this alternative. This has the potential to lead to direct mortality of vegetation, via the crushing of plants, and indirect mortality

from increases in erosion and sedimentation. The increasing use of OHVs on BLM land can also transport noxious and invasive weed seeds from infested areas to un-infested areas. Surface disturbance associated with OHV use (e.g., crushing of vegetation and soil disturbance) has the potential to increase the susceptibility of native plant communities to weed establishment and can modify localized soil conditions to the point where they are unsuitable for establishment by native species, which could result in adverse impacts to the relict vegetation. Vehicles driving over the vegetation would crush plants and the relevant and important value could be adversely impacted.

Impacts from Lands and Realty

Under this alternative, the area would not be recommended for mineral withdrawal, and acquisition of non-federal inholdings would not be pursued. Thus, the relevant and important value of the area would not receive additional protection from lands and realty actions.

Impacts from Minerals and Energy

Under this alternative, the area would be open to oil and gas leasing with standard lease terms. Impacts to vegetation from oil and gas development would include loss or injury of plants due to excavation or trampling, burial under piles of waste material, toxic responses from use of chemicals in mineral extraction or waste pits, and increased exposure to dust and other contaminants associated with construction and use of access roads. In addition, disturbance of reclamation-limited soils could increase the opportunity for exotic plant species and noxious weed infestations. In the worst-case scenario, all vegetation would be removed from a parcel of land, and the site would be permanently altered to prevent future vegetation growth. Oil and gas development would have significant impacts to the relict vegetation of the area.

Impacts from Special Designations

Areas of Critical Environmental Concern

The North Caineville Mesa ACEC would not be designated under this alternative, and no special management prescriptions would be implemented to specifically protect the relevant and important value of the area. Potential impacts to relict vegetation could occur under this alternative.

Proposed RMP

Impacts from Visual Resources

Designation and protective management would continue for the North Caineville Mesa ACEC under the Proposed RMP and provide protection for the relict vegetation relevant and important value. Scenery is not a relevant or important value of this ACEC. However, the ACEC would be managed to meet VRM Class II objectives. This would retain the existing character of the landscape by restricting surface-disturbing activities and would provide indirect protection to the relevant and important value of relict vegetation on the mesa.

Impacts from Livestock Grazing

The North Caineville Mesa ACEC would be unavailable for grazing within the Proposed RMP. This management prescription provides protection for the relict vegetation relevant and important value within this ACEC.

Impacts from Travel Management

The ACEC would be closed to OHV use under the Proposed RMP, which would provide protection to the relevant and important relict vegetation value from this type of use.

Impacts from Lands and Realty

Under the Proposed RMP, the North Caineville Mesa ACEC would be recommended for mineral withdrawal and would be protected from locatable mineral surface disturbance. In addition, land acquisitions to acquire non-federal inholdings from willing sellers would be pursued. These management actions would help to protect the ACEC's relevant and important value of relict vegetation.

Impacts from Minerals and Energy

The ACEC would be open to oil and gas leasing with NSO. This would protect the relevant and important value of relict vegetation from surface disturbance.

Impacts from Special Designations

Areas of Critical Environmental Concern

Under the Proposed RMP, the North Caineville Mesa ACEC would continue to be designated as an ACEC and managed to protect the relevant and important relict vegetation community located on top of the mesa.

Alternatives C and D

Impacts from Visual Resources

Impacts would be similar to those described under Alternative N. The North Caineville Mesa ACEC would be included in the larger potential Badlands ACEC, which includes protection for additional relevant and important values.

Impacts from Livestock Grazing

Impacts would be similar to those described under Alternative N.

Impacts from Travel Management

Impacts would be similar to those described under Alternative N.

Impacts from Lands and Realty

Impacts would be similar to those described under Alternative N.

Impacts from Minerals and Energy

The potential Badlands ACEC, including the existing North Caineville Mesa ACEC, would be closed to oil and gas leasing under this alternative. This would protect the relevant and important value from surface disturbance. The ACEC would be recommended for mineral withdrawal and would be protected from locatable mineral surface disturbance. Additionally, the ACEC would be a candidate for withdrawal from consideration for coal development in subsequent coal planning efforts and therefore would be protected from coal mining surface disturbance, which would protect the relict vegetation from adverse impacts.

Impacts from Special Designations

Areas of Critical Environmental Concern

Impacts would be similar to those described under Alternative N.

South Caineville Mesa ACEC

The South Caineville Mesa ACEC encompasses 4,100 acres. This ACEC is located entirely within the Mount Ellen—Blue Hills WSA. The relevant and important value is the relict vegetation found on top of

the mesa. Impacts to the relevant and important value of this ACEC could occur from the following resource management programs:

- Visual Resources
- Livestock Grazing
- Travel Management
- Lands and Realty
- Minerals and Energy
- Special Designations.

Other programs were determined to have little or no impact on the relict vegetation of this ACEC. There are no WSR decisions that would impact South Caineville Mesa ACEC.

Alternative N: No Action

Impacts from Visual Resources

Scenery is not a relevant or important value of this ACEC. However, under this alternative, the ACEC is managed to meet VRM Class I objectives due to its location within the Mount Ellen—Blue Hills WSA. This would preserve the existing character of the landscape by restricting surface-disturbing activities, and it would provide protection to the relict vegetation on the mesa.

Impacts from Livestock Grazing

The South Caineville Mesa ACEC is unavailable for grazing. This management prescription provides protection for the relict vegetation on top of the mesa (this ACEC's relevant and important value) by eliminating the possibility of damage to the vegetation from grazing or trampling by livestock.

Impacts from Travel Management

The ACEC is closed to OHV use under this alternative, which would provide protection to the relevant and important value from this type of use by eliminating the possibility of damage to the vegetation from vehicles crushing plants, compacting soils, or spreading invasive species.

Impacts from Lands and Realty

Under this alternative, the South Caineville Mesa ACEC would be recommended for mineral withdrawal and would be protected from locatable mineral surface disturbance. In addition, land acquisitions to acquire non-federal inholdings from willing sellers would be pursued. Both of these management actions would help to protect the ACEC's relevant and important value.

Impacts from Minerals and Energy

The ACEC is closed to oil and gas leasing due to its location within the Mount Ellen—Blue Hills WSA. This would protect the relevant and important value from surface disturbance. The ACEC would be recommended for mineral withdrawal and would be protected from locatable mineral surface disturbance. Additionally, the ACEC would be considered for withdrawal from consideration for coal development in subsequent coal planning efforts and therefore would be protected from coal mining surface disturbance.

Impacts from Special Designations

Wilderness Study Areas

The ACEC is within the Mount Ellen—Blue Hills WSA. Continued management of WSAs under the IMP would limit surface-disturbing actions that could adversely impact relevant and important values. WSAs

are closed to oil and gas leasing, precluding any impact from oil and gas development, and they are managed as VRM Class I, which further restricts surface-disturbing activities.

Areas of Critical Environmental Concern

South Caineville Mesa ACEC is managed to protect the relevant and important relict vegetation that is found on top of the mesa. The area would continue to be managed for the protection of its relevant and important value.

Alternative A

Impacts from Visual Resources

Under this alternative, the area would be designated as VRM Class I due to its location within the Mount Ellen—Blue Hills WSA. This would preserve the existing character of the landscape by restricting surface-disturbing activities, and it would provide protection to the relict vegetation.

Impacts from Livestock Grazing

Under this alternative, the area would be available for livestock grazing, so the relict vegetation could be grazed by domestic livestock. However, management of livestock grazing in accordance with the IMP and *Fundamentals of Rangeland Health* and *Standards and Guidelines for Grazing Administration* would minimize impacts to the relict vegetation on South Caineville Mesa. Due to a lack of access to the top of South Caineville Mesa and lack of water availability, it is unlikely that this area would be grazed. Only hiking routes currently lead to the top of South Caineville Mesa; a route would need to be re-established to allow livestock to be trailed up onto the Mesa.

Impacts from Travel Management

Motorized travel in the South Caineville Mesa area would be designated as limited to designated routes under this alternative, but no routes have been identified for designation on the South Caineville Mesa and only ways identified within the WSA inventories would be available for designation. Should any routes be designated, there could be localized impacts to the relict vegetation from motorized vehicles. However, due to the non-impairment standard of the IMP (for management of WSAs), the relevant and important value would not be adversely impacted.

Impacts from Lands and Realty

Under this alternative, the area would not be recommended for mineral withdrawal, and there would be no ACEC management direction for the acquisition of non-Federal inholdings. However, because of the location of this potential ACEC within the Mount Ellen/Blue Hills WSA, lands actions such as mineral withdrawal, acquisition of non-Federal inholdings and ROW exclusion would continue to be managed as identified under the IMP. Within the WSA, acquisition of non-Federal inholdings would be pursued. Continued management of the WSA under the IMP would provide protection from surface disturbing actions.

Impacts from Minerals and Energy

Impacts would be similar to those described under Alternative N, except that the area would not be recommended for mineral withdrawal. The WSA would continue to provide protection but would not prevent surface disturbing activities associated with locatable mineral development. The IMP allows for locatable mining claims and assessment work within WSAs subject to the non-impairment clause. No motorized ways have been identified on South Caineville Mesa. Therefore, any minerals related activities and access would be by non-motorized means and the potential for surface disturbance is minimal.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Areas of Critical Environmental Concern

The ACEC would not be designated under this alternative, and no special management prescriptions would be implemented to specifically protect the relevant and important value of the area. However, because the South Caineville Mesa area is within the Mount Ellen—Blue Hills WSA, the area would be managed pursuant to the IMP, which would provide adequate protection for the relevant and important value of relict vegetation.

Proposed RMP

Impacts from Visual Resources

Under the Proposed RMP, the South Caineville Mesa would not be designation as an ACEC. However, the area would be designated as VRM Class I due to its location within the Mount Ellen—Blue Hills WSA. This would preserve the existing character of the landscape by restricting surface-disturbing activities, and it would provide indirect protection to the relevant and important value of relict vegetation.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative A. As discussed under the analysis for Alternative A, due to lack of access to the top of South Caineville Mesa and lack of water availability, it is unlikely that this area would be grazed. Only hiking routes currently occur to the top of South Caineville Mesa. A route would need to be re-established to allow livestock to be trailed up onto the Mesa. South Caineville Mesa is located within the Mount Ellen/Blue Hills WSA. It is unlikely that construction of a route to accommodate grazing management needs would be consistent with the non-impairment standard of the IMP. Therefore, there would be no impacts to the relevant and important value of relict vegetation.

Impacts from Travel Management

Under the Proposed RMP, the South Caineville Mesa ACEC would be closed to OHV use, which would provide protection to the relevant and important value of relict vegetation on the mesa top. Closing the area to OHV use would eliminate the possibility of damage to the vegetation from vehicles crushing plants, compacting soils, or spreading invasive species.

Impacts from Lands and Realty

Under the Proposed RMP, the area would not be recommended for mineral withdrawal, and there would be no ACEC management direction for the acquisition of non-Federal inholdings. However, because of the location of this potential ACEC within the Mount Ellen/Blue Hills WSA, lands actions such as mineral withdrawal, acquisition of non-Federal inholdings and ROW exclusion would continue to be managed as identified under the IMP. Within the WSA, acquisition of non-Federal inholdings would be pursued. Continued management of the WSA under the IMP would provide protection from surface disturbing actions and it would provide indirect protection to the relevant and important value of relict vegetation.

Impacts from Minerals and Energy

Impacts would be similar to those described under Alternative N, except that the area would not be recommended for mineral withdrawal. The WSA would continue to provide protection but would not prevent surface disturbing activities associated with locatable mineral development. The IMP allows for

locatable mining claims and assessment work within WSAs subject to the non-impairment clause. However, there would be no motorized use authorized on South Caineville Mesa. Therefore, any minerals related activities and access would be by non-motorized means and the potential for surface disturbance to the relevant and important value of relict vegetation is minimal.

Impacts from Special Designations

Wilderness Study Areas

As in the other alternatives, the South Caineville Mesa ACEC is within the Mount Ellen—Blue Hills WSA. Continued management of WSAs under the IMP would limit surface-disturbing actions which provides protection for the relevant and important relict vegetation value of this ACEC. WSAs are closed to oil and gas leasing, precluding any impact from oil and gas development, and they are managed as VRM Class I, which further restricts surface-disturbing activities.

Areas of Critical Environmental Concern

The South Caineville Mesa ACEC would not be designated under the Proposed RMP, and no special management prescriptions would be implemented to specifically protect the relevant and important value of the area. However, because the South Caineville Mesa area is within the Mount Ellen—Blue Hills WSA, the area would be managed pursuant to the IMP, which would provide adequate protection for the relict vegetation relevant and important value identified within the area.

Alternatives C and D

Impacts from Visual Resources

Impacts would be similar to those described under Alternative N. The existing South Caineville Mesa ACEC would be included in the larger potential Badlands ACEC, which includes additional management protection for additional relevant and important values.

Impacts from Livestock Grazing

Impacts would be similar to those described under Alternative N.

Impacts from Travel Management

Impacts would be similar to those described under Alternative N.

Impacts from Lands and Realty

Impacts would be similar to those described under Alternative N.

Impacts from Minerals and Energy

Impacts would be similar to those described under Alternative N.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Areas of Critical Environmental Concern

Impacts would be similar to those described under Alternative N.

Beaver Wash ACEC

The Beaver Wash ACEC encompasses 4,800 acres, and 99 percent of this ACEC is located within the Dirty Devil WSA. The relevant and important value is its desert riparian ecosystem. Impacts to the relevant and important value of this ACEC could occur from the following resource management programs:

- Vegetation
- Visual Resources
- Livestock Grazing
- Travel Management
- Lands and Realty
- Minerals and Energy
- Special Designations.

Other programs were determined to have little or no impact on the desert riparian ecosystem of this ACEC.

Alternative N: No Action

Impacts from Vegetation

Under Alternative N, no surface-disturbing activities would be allowed within 500 feet of riparian areas unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. Within the 99 percent of the ACEC located within the WSA, surface-disturbing activities would only be allowed if consistent with the IMP. This would protect the desert riparian ecosystem from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment.

Impacts from Visual Resources

Scenery is not a relevant or important value of this ACEC. However, under this alternative, all but 68 acres (which are outside the WSA) are managed to meet VRM Class I objectives due to its location within the Dirty Devil WSA. This would preserve the existing character of the landscape by restricting surface-disturbing activities, and it would provide protection to the desert riparian ecosystem. The 68 acres outside the WSA would be managed to meet VRM Class IV objectives. Areas designated as VRM Class IV would be subject to actions that allow for greater landscape modification and therefore greater surface disturbance. These areas could be subject to such actions as complete vegetation removal, which would drastically alter (at least in the short term) the vegetation in the area.

Impacts from Livestock Grazing

The Beaver Wash ACEC is unavailable for grazing from the south boundary of Section 25 northward, and fencing has been installed to restrict livestock in that portion of the ACEC. This management prescription provides protection for the desert riparian ecosystem relevant and important value within this ACEC. The remainder of the ACEC (approximately 800 acres) is available for grazing. Management of livestock grazing in accordance with the *Fundamentals of Rangeland Health* and *Standards and Guidelines for Grazing Administration* would protect this area as well.

Impacts from Travel Management

The ACEC is closed to OHV use under this alternative, which would provide protection to the relevant and important value from this type of use.

Impacts from Lands and Realty

Under this alternative, the Beaver Wash ACEC would be recommended for mineral withdrawal and would be protected from locatable mineral surface disturbance. In addition, land acquisitions to acquire non-federal inholdings from willing sellers would be pursued. Both of these management actions would help to protect the ACEC's relevant and important value.

Impacts from Minerals and Energy

The ACEC is closed to oil and gas leasing due to its location within the Dirty Devil WSA. This would protect the relevant and important value from surface disturbance. The ACEC would be recommended for mineral withdrawal and would be protected from locatable mineral surface disturbance. Additionally, the ACEC would be a candidate for withdrawal from consideration for coal development in subsequent coal planning efforts and therefore would be protected from coal mining surface disturbance. Thus, no surface-disturbing activities would be allowed, which would result in protection of the area's desert riparian ecosystem.

Impacts from Special Designations

Wilderness Study Areas

The majority of the Beaver Wash ACEC is within the Dirty Devil WSA. Continued management of WSAs under the IMP would limit surface-disturbing actions that could adversely impact relevant and important values. WSAs are closed to oil and gas leasing, precluding any impact from oil and gas development, and they are managed as VRM Class I, which further restricts surface-disturbing activities.

Wild and Scenic Rivers

The Beaver Wash Canyon eligible WSR is within the existing Beaver Wash ACEC. Although no suitability determination would be made, BLM policy requires the protection of the outstandingly remarkable values and free-flowing nature of all eligible WSRs. This interim management would provide protection of the ACEC's relevant and important values.

Areas of Critical Environmental Concern

Beaver Wash ACEC is managed to protect its relevant and important cold riparian ecosystem located in an otherwise desert environment. The area would continue to be managed for the protection of its relevant and important value.

Alternative A

Impacts from Vegetation

Under this alternative, no surface-disturbing activities would be allowed within 330 feet on each side of the stream or the 100-year floodplain, whichever is greater, unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the desert riparian ecosystem from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment. Although the riparian zone protection is less under this alternative, the impacts would be similar to Alternative N for the WSA portion of the potential ACEC, as surface disturbing actions would only be allowed consistent with the IMP. For the 68 acres outside of the WSA, surface disturbing actions related to vegetation treatments could occur. The potential for impacts to the relevant and important values would be limited to the 1% of the potential ACEC outside of the WSA.

Impacts from Visual Resources

Under this alternative, the area within the Dirty Devil WSA would be designated as VRM Class I. This would preserve the existing character of the landscape by restricting surface-disturbing activities, and it would provide protection to the desert riparian ecosystem. The 68 acres outside the WSA would be managed to meet VRM Class III or IV objectives. Areas designated as VRM Classes III or IV would be subject to actions that allow for greater landscape modification and therefore greater surface disturbance. These areas could be subject to such actions as complete vegetation removal, which would drastically alter (at least in the short term) the vegetation in the area. However, scenery is not a relevant or important value of this ACEC.

Impacts from Livestock Grazing

Under this alternative, the entire Beaver Wash Canyon area would be available for grazing. However, management of livestock grazing in accordance with the *Fundamentals of Rangeland Health* and *Standards and Guidelines for Grazing Administration* would minimize impacts to vegetation in the area.

Impacts from Travel Management

Motorized travel in the Beaver Wash Canyon area would be limited to designated routes under this alternative, but no routes have been identified for designation and only ways identified within the WSA inventories would be available for designation. Should any routes be designated, there could be localized impacts to vegetation from motorized vehicles. However, due to the non-impairment standard of the IMP (for management of WSAs) which applies to all but 68 acres of the potential ACEC, the potential for impacts is minimal and the relevant and important values should not be adversely impacted.

Impacts from Lands and Realty

Under this alternative, the area would not be recommended for mineral withdrawal, and acquisition of non-federal inholdings would not be pursued. Thus, the relevant and important value of the area would not receive additional protection from lands and realty actions. The 99 percent of the ACEC located in the WSA would continue to receive protection from surface-disturbing activities. Due to the non-impairment standard of the IMP (for management of WSAs) which applies to all but 68 acres of the potential ACEC, the potential for impacts is minimal and the relevant and important values should not be adversely impacted. Therefore, mineral withdrawal would not be necessary for the protection of the relevant and important value.

Impacts from Minerals and Energy

Impacts would be similar to those described under Alternative N except that the area would not be recommended for mineral withdrawal. However, surface disturbing activities associated with locatable mineral development would be subject to the non-impairment standard of the IMP (for management of WSAs) which applies to all but 68 acres of the potential ACEC. The potential for impacts is minimal and the relevant and important values should not be adversely impacted.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

The Beaver Wash Canyon eligible river segment would not be recommended as suitable under this alternative, with no special management to protect its outstandingly remarkable values and free-flowing nature. This would provide no additional protection to the area's relevant and important value.

Areas of Critical Environmental Concern

The Beaver Wash ACEC would not be designated under this alternative, and no special management prescriptions would be implemented to specifically protect the relevant and important values of the area. However, because the majority of the area is within the Dirty Devil WSA, the area would be managed pursuant to the IMP, which would provide adequate protection for the area's desert riparian ecosystem.

Proposed RMP

Impacts from Vegetation

Under the Proposed RMP, no surface-disturbing activities would be allowed within 330 feet on each side of the stream or the 100-year floodplain, whichever is greater, unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the desert riparian ecosystem relevant and important value from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment. Although the riparian zone protection is less in the Proposed RMP than in Alternatives N, C and D, the impacts would be similar to Alternative N for the WSA portion of the potential ACEC, as surface disturbing actions would only be allowed consistent with the IMP. For the 68 acres outside of the WSA, surface disturbing actions related to vegetation treatments could occur, but would need to be consistent with the riparian area decision. The potential for impacts to the relevant and important desert riparian ecosystem value would be limited to the 1% of the potential ACEC outside of the WSA.

Impacts from Visual Resources

Impacts would be similar to those described under Alternative A, except the 68 acres outside the WSA would be designated as VRM Class IV, which would allow greater landscape modification and therefore greater potential for surface disturbance. The potential for impacts to the relevant and important desert riparian ecosystem value from surface disturbing actions would be limited to the 1% of the potential ACEC outside of the WSA and would also be minimized by the decisions for protection of riparian areas. Scenery is not a relevant or important value of this ACEC.

Impacts from Livestock Grazing

Under the Proposed RMP, the entire Beaver Wash area would be available for grazing. However, management of livestock grazing in accordance with the *Fundamentals of Rangeland Health* and *Standards and Guidelines for Grazing Administration* and management for the protection of riparian areas would minimize impacts to the desert riparian ecosystem relevant and important value of this ACEC.

Impacts from Travel Management

Under the Proposed RMP, the portion of the Beaver Wash ACEC located within the Dirty Devil WSA would be closed to motorized use, eliminating potential impact to the desert riparian ecosystem relevant and important value within the WSA portion of the potential ACEC. The 68 acres of the potential ACEC outside the WSA would be limited to designated routes. There are only three short spur routed identified within this area and they do not occur within the riparian zone. Therefore the relevant and important desert riparian ecosystem value should not be adversely impacted.

Impacts from Lands and Realty

Under the Proposed RMP, the area would not be recommended for mineral withdrawal, and acquisition of non-federal inholdings would not be pursued. Thus, the relevant and important value of the area would not receive additional protection from lands and realty actions. The 99 percent of the ACEC located in the WSA would continue to receive protection from surface-disturbing activities. Due to the non-impairment

standard of the IMP (for management of WSAs) which applies to all but 68 acres of the potential ACEC, the potential for impacts is minimal and the relevant and important desert riparian ecosystem value should not be adversely impacted. Therefore, mineral withdrawal would not be necessary for the protection of the relevant and important value.

Impacts from Minerals and Energy

Impacts would be similar to those described under Alternative N except that the area would not be recommended for mineral withdrawal. Any surface disturbing activities associated with locatable mineral development would be subject to the non-impairment standard of the IMP (for management of WSAs) which applies to all but 68 acres of the potential ACEC. Surface disturbing activities associated with locatable mineral development outside the WSA would need to be consistent with protection measures for riparian resources. Therefore, the potential for impacts is minimal and the relevant and important desert riparian ecosystem value should not be adversely impacted.

Impacts from Special Designations

Wilderness Study Areas

As common to all alternatives, 99% of the potential Beaver Wash ACEC is within the Dirty Devil WSA. Continued management of WSAs under the IMP would limit surface-disturbing actions that could adversely impact the relevant and important desert riparian ecosystem value. WSAs are closed to oil and gas leasing, precluding any impact from oil and gas development, and they are managed as VRM Class I, which further restricts surface-disturbing activities.

Wild and Scenic Rivers

The Beaver Wash Canyon eligible river segment would not be recommended as suitable under this alternative, with no special management to protect its outstandingly remarkable values and free-flowing nature. By not designating this river segment as suitable there would be no additional protective prescriptions to the ACEC's relevant and important value.

Areas of Critical Environmental Concern

The Beaver Wash ACEC would not be designated under this alternative, and no special management prescriptions would be implemented to specifically protect the relevant and important desert riparian ecosystem value of the area. However, because the majority of the area is within the Dirty Devil WSA (99%), the area would be managed pursuant to the IMP, which would provide adequate protection for the area's desert riparian ecosystem. The 68 acres (1%) outside the WSA receives indirect protection from other resource decisions and the relevant and important desert riparian ecosystem value should not be adversely impacted.

Alternatives C and D

Impacts from Vegetation

Impacts would be similar to those described under Alternative N. The existing Beaver Wash ACEC would be included in the larger potential Dirty Devil ACEC, which includes additional management prescriptions for the protection of its relevant and important values. The buffer zone around riparian areas in which no surface-disturbing activities would be allowed would be 660 feet. This would protect the widest area around the desert riparian ecosystem from surface-disturbing activities, but it could also restrict potentially beneficial actions such as riparian area restoration and vegetation treatment.

Impacts from Visual Resources

Impacts would be similar to those described under Alternative A.

Impacts from Livestock Grazing

Impacts would be similar to those described under Alternative N.

Impacts from Travel Management

Impacts would be similar to those described under Alternative N.

Impacts from Lands and Realty

Impacts would be similar to those described under Alternative N.

Impacts from Minerals and Energy

Impacts would be similar to those described under Alternative N.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Impacts would be similar to those described under Alternative N, except that Beaver Wash Canyon would be recommended as suitable for inclusion in the National Wild and Scenic River System and tentatively classified as a wild river. The river would be managed to protect its outstandingly remarkable values and free-flowing nature, including closing to oil and gas leasing, closing to OHV use, and recommendation for withdrawal from mineral entry. These management prescriptions would provide protection of the ACEC's relevant and important value.

Areas of Critical Environmental Concern

Impacts would be similar to those described under Alternative N.

Gilbert Badlands RNA ACEC

The Gilbert Badlands RNA ACEC encompasses 3,680 acres. This ACEC is located entirely within the Mount Ellen—Blue Hills WSA. The relevant and important value is the badlands geology. Impacts to the relevant and important value of this ACEC could occur from the following resource management programs:

- Visual Resources
- Livestock Grazing
- Travel Management
- Lands and Realty
- Minerals and Energy
- Special Designations.

Other programs were determined to have little or no impact on the badlands geology of this ACEC.

Alternative N: No Action

Impacts from Visual Resources

Scenery is not a relevant or important value of this ACEC. However, under this alternative, the ACEC is managed to meet VRM Class I objectives due to its location within the Mount Ellen—Blue Hills WSA.

This would preserve the existing character of the landscape by restricting surface-disturbing activities, and it would provide protection to the geomorphology of the area.

Impacts from Livestock Grazing

The ACEC is available for grazing. However, there is little-to-no threat to the Gilbert Badlands ACEC from livestock grazing because of topographic isolation and the lack of vegetation and water within the Mancos Shale badlands to support livestock.

Impacts from Travel Management

The ACEC is closed to OHV use under this alternative, which would provide protection from this type of use to the relevant and important value of the area.

Impacts from Lands and Realty

Under this alternative, the ACEC would be recommended for mineral withdrawal and would be protected from locatable mineral surface disturbance. In addition, land acquisitions to acquire non-federal inholdings from willing sellers would be pursued. Both of these management actions would help to protect the ACEC's relevant and important value.

Impacts from Minerals and Energy

The ACEC is closed to oil and gas leasing due to its location within the Mount Ellen—Blue Hills WSA. This would protect the relevant and important value from surface disturbance. The ACEC would be recommended for mineral withdrawal and would be protected from locatable mineral surface disturbance. Additionally, the ACEC would be a candidate for withdrawal from consideration for coal development in subsequent coal planning efforts and therefore would be protected from coal mining surface disturbance. Thus, no surface-disturbing activities would be allowed, which would result in protection of the area's relevant and important value.

Impacts from Special Designations

Wilderness Study Areas

Gilbert Badlands ACEC is within the Mount Ellen—Blue Hills WSA. Continued management of WSAs under the IMP would limit surface-disturbing actions that could adversely impact relevant and important values. WSAs are closed to oil and gas leasing, precluding any impact from oil and gas development, and they are managed as VRM Class I, which further restricts surface-disturbing activities.

Areas of Critical Environmental Concern

The Gilbert Badlands ACEC is also a research natural area, a pre-FLPMA administrative designation that was elected to be carried forward. The ACEC is managed to protect its relevant and important geomorphology (Mancos Shale badlands). The area would continue to be managed for the protection of its relevant and important value.

Alternative A

Impacts from Visual Resources

Under this alternative, the area would be designated as VRM Class I due to its location within the Mount Ellen—Blue Hills WSA. This would preserve the existing character of the landscape by restricting surface-disturbing activities, and it would provide protection to the shale badlands.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Travel Management

Motorized travel in the Gilbert Badlands area would be designated as limited to designated routes under this alternative. However, due to the topographic isolation of the area, rough nature of the badlands, and location within the Mount Ellen—Blue Hills WSA, it is unlikely that routes would be designated across the badlands. Only ways identified within the WSA inventories would be available for designation. If motorized vehicles were to drive across the badlands, damage to the geologic features could occur.

Impacts from Lands and Realty

Under this alternative, the area would not be recommended for mineral withdrawal, and there would be no ACEC management decision for the acquisition of non-Federal inholdings. However, because of the location of this potential ACEC within the Mount Ellen/Blue Hills WSA, lands actions such as mineral withdrawal, acquisition of non-Federal inholdings and ROW exclusion would continue to be managed as identified under the IMP. Within the WSA, acquisition of non-Federal inholdings would be pursued. Continued management of the WSA under the IMP would provide protection from surface disturbing actions.

Impacts from Minerals and Energy

Impacts would be similar to those described under Alternative N, except that the area would not be recommended for mineral withdrawal, so surface-disturbing activities associated with locatable mineral development (and impacts to the relevant and important value of the area) could occur. The WSA would continue to provide protection but would not prevent surface disturbing activities associated with locatable mineral development. The IMP allows for locatable mining claims and assessment work within WSAs subject to the non-impairment clause. Minimal surface disturbance that could be reclaimed immediately or within 48 hours could occur, but the potential to impact the overall badlands geology would be minimal.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Areas of Critical Environmental Concern

The Gilbert Badlands ACEC would not be designated under this alternative, and no special management prescriptions would be implemented to specifically protect the relevant and important values of the area. However, because this area is entirely within the Mount Ellen—Blue Hills WSA, the area would be managed pursuant to the IMP, which would provide adequate protection for the area's relevant and important values.

Proposed RMP

Impacts from Visual Resources

Under the Proposed RMP, the Gilbert Badlands would not be designated as an ACEC. The potential ACEC is located within the Mount Ellen—Blue Hills WSA which would be designated as VRM Class I Although scenery is not a relevant and important value of this potential ACEC, management as VRM Class would preserve the existing character of the landscape by restricting surface-disturbing activities, and it would provide indirect protection to the shale badlands geology relevant and important value for this area.

Impacts from Livestock Grazing

The potential ACEC would continue to be available for grazing. However, there is little-to-no threat to the Gilbert Badlands ACEC badlands geology relevant and important value from livestock grazing. The area is topographically isolated and lack sufficient vegetation and water within the Mancos Shale badlands to support livestock.

Impacts from Travel Management

The potential Gilbert Badlands ACEC is closed to OHV use under the Proposed RMP, eliminating potential impacts to the badlands geology relevant and important value from motorized use.

Impacts from Lands and Realty

Under the Proposed RMP, the area would not be recommended for mineral withdrawal, and there would be no ACEC management decision for the acquisition of non-Federal inholdings. However, because of the location of this potential ACEC within the Mount Ellen-Blue Hills WSA, lands actions such as mineral withdrawal, acquisition of non-Federal inholdings and ROW exclusion would continue to be managed as identified under the IMP. Within the WSA, acquisition of non-Federal inholdings would be pursued. Continued management of the WSA under the IMP would provide adequate protection for the badlands geology relevant and important value of this potential ACEC.

Impacts from Minerals and Energy

Impacts would be similar to those described under Alternative N, except that the area would not be recommended for mineral withdrawal, so surface-disturbing activities associated with locatable mineral development (and impacts to the relevant and important value of the area) could occur. The WSA would continue to provide protection but would not prevent surface disturbing activities associated with locatable mineral development. The IMP allows for locatable mining claims and assessment work within WSAs subject to the non-impairment clause. Only minimal surface disturbance that could be reclaimed immediately or within 48 hours could occur. Therefore, the potential to impact the overall badlands geology relevant and important value would be minimal.

Impacts from Special Designations

Wilderness Study Areas

Gilbert Badlands ACEC is within the Mount Ellen—Blue Hills WSA. Continued management of WSAs under the IMP would limit surface-disturbing actions that could adversely impact the badlands geology relevant and important value. WSAs are closed to oil and gas leasing, precluding any impact from oil and gas development, and they are managed as VRM Class I, which further restricts surface-disturbing activities.

Areas of Critical Environmental Concern

The Gilbert Badlands ACEC would not be designated under the Proposed RMP, and no special management prescriptions would be implemented to specifically protect the relevant and important value of the area. However, because this area is entirely within the Mount Ellen—Blue Hills WSA, the area would be managed pursuant to the IMP, which would provide adequate protection for the area's badlands geology relevant and important value.

Alternatives C and D

Impacts from Visual Resources

Impacts would be similar to those described under Alternative N. The existing Gilbert Badlands ACEC would be included in the larger potential Badlands ACEC, which includes additional management prescriptions for the protection of its relevant and important values.

Impacts from Livestock Grazing

Impacts would be similar to those described under Alternative N.

Impacts from Travel Management

Impacts would be similar to those described under Alternative N.

Impacts from Lands and Realty

Impacts would be similar to those described under Alternative N.

Impacts from Minerals and Energy

Impacts would be similar to those described under Alternative N.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Areas of Critical Environmental Concern

Impacts would be similar to those described under Alternative N.

4.5.3.2 Potential ACECs

Badlands Potential RNA ACEC

The Badlands Potential RNA ACEC encompasses 88,900 acres of public lands in the Caineville area of eastern Wayne County and includes the existing North and South Caineville Mesa ACECs and Factory Butte. Forty-six percent of the area is within the Mount Ellen—Blue Hills WSA. The relevant and important values of the area are scenic, special status plant species, natural processes (wind erosion), riparian, and relict vegetation values.

The SSS (notably Wright fishhook cactus and Winkler pincushion cactus) and scenic relevant and important values could be threatened with irreparable damage by ground disturbance associated with cross-country OHV use under some alternatives. The natural process (wind erosion) value, per se, would not be affected by OHV use. However, preliminary research suggests that the soil erosion increases in badlands areas heavily used by OHVs, which could have indirect effects on the natural process. Long-term studies are necessary to verify and quantify the preliminary findings.

The riparian value would not be threatened with irreparable harm due to protective management, such as surface disturbance protection in riparian areas, in each alternative.

The relict vegetation relevant and important values (North and South Caineville Mesas) could be threatened with irreparable damage if these areas were made available for livestock grazing, although topography, access, and lack of water make it difficult to graze livestock on the mesa tops. Historically,

limited grazing may have occurred in these areas during wet winter seasons. Making the mesas available for grazing would present some risk to the relict vegetation under those alternatives.

Impacts to the relevant and important value of this ACEC could occur from the following resource management programs:

- Visual Resources
- Special Status Species
- Non-WSA Lands with Wilderness Characteristics
- Livestock Grazing
- Recreation
- Travel Management
- Lands and Realty
- Minerals and Energy
- Special Designations.

Other programs were determined to have little or no impact on the relevant and important values of this potential ACEC.

Alternative N: No Action

Impacts from Visual Resources

Visual resource management classes within the potential ACEC vary by alternative, as shown in Table 4-60. The higher VRM Classes (I and II) would better protect the scenic values and, by limiting surface-disturbing activities, also benefit other relevant and important values.

Class A scenery is identified as a relevant and important value of this ACEC. Class A scenery occurs within the Mount Ellen—Blue Hills WSA, an area north of Highway 24 encompassing North Caineville Mesa, Factory Butte, and the Fremont River Corridor. Although none of the lands within this potential ACEC are classified as VRM Class I, the portion within the Mount Ellen—Blue Hills WSA (40,400 acres) would be managed to meet VRM Class I objectives. This would preserve the existing character of the landscape by restricting surface-disturbing activities, and it would provide protection to the area. VRM Class II would protect scenic values within 77% of the area. In the remaining 23% of the area (which is managed as either VRM Class III or Class IV), activities that could adversely impact relevant and important values would be allowed.

Table 4-60. VRM Class Designations within Badlands Potential ACEC

		Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Class I	Acres	0*	40,400	40,400	40,400	75,800
	% ACEC	0%	46%	46%	46%	85%
Class II	Acres	68,300	0	23,200	28,400	7,700
	% ACEC	77%*	0%	26%	32%	9%
Class III	Acres	4,000	400	3,700	4,000	500
	% ACEC	4%	0%	4%	4%	1%

		Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Class IV	Acres	16,600	48,100	21,600	16,100	5,000
	% ACEC	19%	55%	24%	18%	5%

* By BLM policy, the portion of the potential ACEC within the Mount Ellen—Blue Hills WSA would be managed to meet VRM Class I objectives. The lands within the WSA were inventoried as VRM Class II and are represented as such in this table.

Impacts from Special Status Species

Under all alternatives, management actions—such as prohibiting the destruction, adverse modification, or fragmentation of listed species habitat; maintaining the integrity of SSS habitat; and habitat improvements—would benefit SSS. In the Proposed RMP, Alternatives A, C, and D, additional strategies (such as utilizing seasonal and spatial buffers for surface-disturbing activities and complying with raptor protection guidelines for powerline construction) would be employed to protect raptors and their habitat. These actions would minimize or eliminate impacts to the SSS relevant and important values.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under this alternative, resulting in no additional protection for relevant and important values.

Impacts from Livestock Grazing

The North and South Caineville Mesas would continue to be unavailable for grazing, which would continue to provide protection to the relict vegetation on the mesa tops. Relict vegetation was not identified as a relevant and important value within the remainder of the potential ACEC. Grazing in the remainder of the area would be managed in accordance with the *Fundamentals of Rangeland Health* and *Standards and Guidelines for Grazing Administration*, which would minimize impacts to the relevant and important values. There would be little-to-no threat to the Gilbert Badlands from livestock grazing because of topographic isolation and lack of vegetation and water within the Mancos Shale badlands to support livestock. This would continue to provide protection to the relevant values of the area.

Impacts from Recreation

Under Alternative N, no SRMAs are proposed, so there would be no impacts to relevant and important values. However, visitor use is expected to increase throughout the RFO. Under this alternative, the entire RFO (with the exception of Yuba Reservoir, which is managed by the Fillmore FO) is identified and managed as an ERMA. Management of recreation in ERMAs is restricted to custodial actions only, with no special prescriptions identified that would limit or control recreational activities. Thus, intensively used recreation sites (such as Factory Butte) could experience impacts to vegetation and other resources. Potential for these impacts would be most likely to occur within the 46% of the area that would be open to OHV use with no specific management emphasis. These activities could result in loss of vegetation cover and soil compaction, as well as a decrease in riparian ecological condition as cross-country activities increase in vegetated areas or spread into the riparian zones. Thus, impacts to relevant and important values of this potential ACEC from recreation could continue under this alternative—or even increase as visitor use increases.

Impacts from Travel Management

OHV area designations vary by alternative, as shown in Table 4-61.

Table 4-61. OHV Area Designations within Badlands Potential ACEC

		Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Open	Acres	40,800	40,400	8,000	0	0
	% Area	46%	45%	9%	0%	0%
Limited	Acres	1,800	48,500	36,400	6,000	4,100
	% Area	2%	55%	41%	7%	5%
Closed	Acres	46,300	0	44,500	82,900	84,800
	% Area	52%	0%	50%	93%	95%

The greatest impacts to relevant and important values from cross-country OHV use could occur under Alternative N. Forty-six percent of the area would be designated as open to OHVs, and relevant and important values would continue to be adversely impacted by vehicles running over vegetation and compacting soil. Two percent of the area would be limited, and 52% would be closed to OHV use, protecting relevant and important values from ground disturbance caused by cross-country OHV use within those areas.

Impacts from Lands and Realty

Withdrawing land from mineral entry would benefit all relevant and important values by protecting them from ground-disturbing activities associated with the exploration and development of locatable minerals. Under Alternative N, the proposal to withdraw North Caineville Mesa (2,200 acres) would benefit the relict vegetation value on the mesa by protecting it from ground disturbance caused by exploration and development of mineral resources. Alternative N would also propose to withdraw South Caineville Mesa (4,100 acres) and Gilbert Badlands (3,680 acres).

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Lands open to oil and gas leasing vary by alternative, as shown in Table 4-62. There would be no impacts to relevant and important values within the WSA, which is closed to oil and gas leasing. The WSA represents 46% of the potential ACEC. An additional 3% of the potential ACEC is open to leasing subject to major constraints (NSO), which would result in minimal impacts to the relevant and important values, and 23% would be open to leasing with minor constraints. In the remainder of the area, impacts to relevant and important values from oil and gas leasing could occur due to surface-disturbing activities.

Protection is also provided by laws, rules, and regulations for other resources. Adherence to VRM Class II standards would provide protection for the Class A scenic values. SSS values would receive protection by the ESA. In addition, the potential ACEC is in a portion of the RFO identified as having low potential for oil and gas development. Few wells are expected to be drilled in this area in the next 15 to 20 years.

Table 4-62. Leasing Stipulations within Badlands Potential ACEC

		Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Standard	Acres	25,100	47,300	37,000	0	0

		Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Lease Terms	**% Area**	28%	53%	42%	0%	0%
Controlled Surface Use or Timing Stipulations	**Acres**	20,000	1,200	6,800	0	0
	% Area	23%	1%	8%	0%	0%
No Surface Occupancy	**Acres**	3,400	0	4,700	0	0
	% Area	3%	0%	5%	0%	0%
Closed	**Acres**	40,400	40,400	40,400	88,900	88,900
	% Area	46%	46%	45%	100%	100%

Leasable Minerals—Coal

There are limited coal resources within the ACEC. Under this alternative, the 2,200-acre North Caineville Mesa ACEC and the 4,100-acre South Caineville Mesa ACEC would be identified as withdrawn from consideration for leasing for surface coal mining. The remainder of the potential ACEC would be available for consideration for leasing for surface coal mining, which would cause irreparable harm to the relevant and important values in the area where surface mining occurred. The 46% of the ACEC within the WSA would be managed pursuant to the IMP, which would provide protection from these activities.

Locatable Minerals

There is potential for uranium, vanadium, and copper mineralization within the area. Under Alternative N, 36% of the potential ACEC (the area outside the WSA) could be impacted by mineral exploration and development. Locatable mineral exploration and development would be allowed under the General Mining Law in these areas. FLPMA requires BLM to regulate mining activities to prevent undue and unnecessary environmental degradation to resources. This would minimize impacts from mining activities to relevant and important values. Difficulty of access due to location makes development unlikely within the next 15 years. Additionally, within a designated ACEC, federal regulations (43 CFR 3809.11 (c) (3)) require that a plan of operations be submitted for any operation causing surface disturbance greater than casual use. This regulation would mitigate the impacts of mining exploration and development on relevant and important values within the North Caineville Mesa ACEC.

Impacts from Special Designations

Wilderness Study Areas

The potential ACEC encompasses 40,400 acres of the Mount Ellen—Blue Hills WSA. Within this area (46% of the potential ACEC), continued management of the WSA under the IMP would limit surface-disturbing actions that could adversely impact relevant and important values. WSAs are closed to oil and gas leasing, precluding any impact from oil and gas development, and they are managed as VRM Class I, which further restricts surface-disturbing activities.

Wild and Scenic Rivers

The Fremont River between Capitol Reef National Park and the Caineville Ditch diversion was determined to be an eligible WSR. Under this alternative, managing to protect its outstandingly remarkable values would also benefit the scenic and riparian relevant and important values within the river corridor.

Areas of Critical Environmental Concern

The North and South Caineville Mesas and Gilbert Badlands ACECs (9,980 combined acres) would be continued under Alternative N, which represents 11% of the Badlands Potential ACEC. Management of these ACECs would allow no uses that would cause irreparable damage to relevant and important values. In addition, because much of the potential ACEC (46%) is within the Mount Ellen—Blue Hills WSA, that portion of the potential ACEC would be managed pursuant to the IMP, which would protect the relevant and important values in that area. Potential impacts could occur under this alternative within the remainder of the potential ACEC.

Alternative A

Impacts from Visual Resources

Under this alternative, the portion of the potential ACEC located within the Mount Ellen—Blue Hills WSA (40,400 acres) would be designated as VRM Class I. This would preserve the existing character of the landscape by restricting surface-disturbing activities, and it would provide protection to the relevant and important values. The remaining 54% of the area would be designated VRM Classes III and IV. Scenic values could be adversely impacted because the objectives for these VRM classes allow actions that can result in moderate-to-major landscape modification and therefore greater surface disturbance. Among all of the alternatives, Alternative A would allow the greatest impacts to scenic resources.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative N.

Impacts from Non-WSA Lands with Wilderness Characteristics

Impacts would be the same as those described under Alternative N.

Impacts from Livestock Grazing

Under this alternative, North and South Caineville Mesas would be available for livestock grazing, which could adversely impact the relict vegetation value. However, because access and water are extremely limited on the mesas, the potential for such use is low. Relict vegetation was not identified as a relevant and important value within the remainder of the potential ACEC. There would be little-to-no threat to Gilbert Badlands from livestock grazing because of topographic isolation and lack of vegetation and water within the Mancos Shale badlands to support livestock. In addition, grazing would be managed in accordance with the *Fundamentals of Rangeland Health* and *Standards and Guidelines for Grazing Administration*, which would minimize impacts to the relevant and important values of the area.

Impacts from Recreation

Under this alternative, the Factory Butte SRMA would include much of the proposed Badlands ACEC that is outside of the WSA. Cross-country OHV use would adversely impact several relevant and important values by vehicles running over vegetation, compacting soil, and possibly causing increased erosion.

Impacts from Travel Management

Forty-five percent of the area would be designated open to OHVs under Alternative A, so relevant and important values could be adversely impacted by cross-country vehicle use. Fifty-five percent of the area would be limited to OHV use, protecting relevant and important values from ground disturbance caused by cross-country OHV use within that portion of the potential ACEC.

Impacts from Lands and Realty

Under this alternative, the area would not be recommended for mineral withdrawal. Thus, the relevant and important value of the area would not receive additional protection from land and realty actions.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Lands open to oil and gas leasing are shown in Table 4-62. There would be no impacts to relevant and important values within the WSA, which is closed to oil and gas leasing. The WSA represents 46% of the potential ACEC. In the remainder of the area, impacts to relevant and important values from oil and gas leasing and development could occur due to surface-disturbing activities. However, the potential ACEC is in a portion of the RFO identified as having low development potential for oil and gas development. Therefore, few wells are expected to be drilled in this area in the next 15 to 20 years. Thus, it is unlikely that surface-disturbing activities from oil and gas development would occur that would impact the relevant and important values of this area.

Leasable Minerals—Coal

There are limited coal resources within the ACEC. Under this alternative, the potential ACEC would be available for consideration for leasing for surface coal mining, which would cause irreparable harm to the relevant and important values in the area where surface mining occurred. The 46% of the ACEC within the WSA would be managed pursuant to the IMP, which would provide protection from these activities.

Locatable Minerals

Impacts would be the same as those described under Alternative N.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Under this alternative, the Fremont River between Capitol Reef National Park and the Caineville Ditch diversion would not be recommended as suitable, with no special management to protect its outstandingly remarkable values and free-flowing nature. This would provide no additional protection to the area's relevant and important values.

Areas of Critical Environmental Concern

The potential Badlands ACEC would not be designated under this alternative, and no special management prescriptions would be implemented to specifically protect the relevant and important values of the area. However, because much of the potential ACEC (46%) is within the Mount Ellen—Blue Hills WSA, that portion of the potential ACEC would be managed pursuant to the IMP, which would protect the relevant and important values in that area. This alternative would present the greatest threat to relevant and important values of the potential ACEC.

Proposed RMP

Impacts from Visual Resources

VRM Classes I and II would protect scenic values within 72% of the area, the majority of the Class A scenery. This would preserve or retain the existing character of the landscape by restricting surface-disturbing activities, and it would provide protection to the scenic relevant and important value.

Restricting surface-disturbing activities for visual resources would also provide indirect protection for the remaining relevant and important values of special status plants, natural processes, riparian and relict vegetation.

The remaining 28% would be designated as either VRM Class III or Class IV, but only a small portion of this area was identified as having scenic values. Although these VRM classes allow actions that can result in moderate-to-major landscape modification, the potential to impact the overall scenic relevant and important value of the potential Badlands ACEC would be minimal.

Impacts from Special Status Species

Under all alternatives, management actions—such as prohibiting the destruction, adverse modification, or fragmentation of listed species habitat; maintaining the integrity of SSS habitat; and habitat improvements—would benefit SSS. In the Proposed RMP, as well as Alternatives A, C, and D, additional strategies (such as utilizing seasonal and spatial buffers for surface-disturbing activities and complying with raptor protection guidelines for powerline construction) would be employed to protect raptors and their habitat. These actions would minimize or eliminate impacts to the SSS relevant and important values.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under the Proposed RMP, portions of the Mount Ellen—Blue Hills non-WSA lands with wilderness characteristics area (3,900 acres).which would be managed to protect, preserve and maintain their wilderness characteristics, overlap the potential Badlands ACEC. Management prescriptions to protect, preserve and maintain wilderness characteristics would protect scenic values, reduce or eliminate surface disturbance, and retain public lands in federal ownership. Approximately 810 acres (less than 1% of the potential ACEC) overlap with the managed wilderness characteristic lands, providing indirect protection for all the relevant and important values that occur within that area.

Impacts from Livestock Grazing

Under the Proposed RMP, the North Caineville Mesa ACEC (which is located wholly within the potential Badlands ACEC) would be designated and would continue to be unavailable for grazing, which would continue to provide protection to the relict vegetation relevant and important value located on North Caineville Mesa. The South Caineville Mesa would be available for livestock grazing, which could adversely impact the relict vegetation relevant and important value. However, because access and water are extremely limited on the mesa, the potential for such use is low. Relict vegetation was not identified as a relevant and important value within the remainder of the potential ACEC.

There would be little to no threat to the relevant and important natural processes value of the Gilbert Badlands or the potential Badlands ACEC as a whole from livestock grazing because of lack of vegetation and water within the Mancos shale badlands to support livestock. In addition, grazing would be managed in accordance with the *Fundamentals of Rangeland Health and Standards and Guidelines for Grazing Administration*, which would minimize impacts to the relevant and important value of natural processes within the potential Badlands ACEC.

Impacts from Recreation

Under the Proposed RMP, 24,400 acres north of Highway 24 would be included in the Factory Butte SRMA. This SRMA would provide special management attention for the cross-country OHV use area, while providing information to visitors regarding the other resources within the area and restricting use in sensitive areas such as the, North Caineville Mesa ACEC, Factory Butte, SSS habitat areas, and the riparian zones located within the ACEC. The OHV open area is an area with little-to-no vegetation.

Studies would continue regarding the long-term effects of OHV use on the Mancos Shale soils (natural processes relevant and important value) at this location.

The portion of the potential Badlands ACEC south of Highway 24 is included in the Henry Mountains SRMA. This SRMA would be managed for a combination of semi-primitive non-motorized and motorized recreation. Managing recreation use would help protect all the relevant and important values that occur within that area (scenic, SSS habitat areas, natural processes and relict vegetation from ground-disturbing activities associated with recreation.

Impacts from Travel Management

Nine percent of the potential Badlands ACEC would be designated open to OHVs under the Proposed RMP. The relevant and important values that are present within the OHV open area are scenic and natural processes (wind erosion) values. A small portion of the area remaining open to cross-country OHV use was identified as having Class A scenery. However, this area has been receiving extensive cross-country use since before completion of the 1982 Henry Mountains MFP and the potential to impact the overall scenic relevant and important value of the potential Badlands ACEC from continuing OHV use in this small area would be minimal. The VRM Class for this area would be adjusted for consistency with the OHV activities that have and would continue to occur there. Studies would continue regarding the long-term effects of OHV use on the Mancos Shale soils at this location, and thus on the natural processes. No SSS, riparian, or relict vegetation values have been identified within the OHV open area.

Forty-one percent of the area would limit OHV use to designated routes, protecting all relevant and important values from ground disturbance caused by cross-country OHV use; 50% of the area would be closed to OHV use, which would result in no impacts from motorized vehicles. Proposed OHV designations under this alternative would reduce or eliminate impacts to all the identified relevant and important values from OHV use within the 91% of the potential ACEC.

Impacts from Lands and Realty

Under the Proposed RMP, the recommendation to withdraw North Caineville Mesa (2,200 acres) would benefit the relict vegetation value on the mesa by protecting it from ground disturbance caused by exploration and development of mineral resources. The remainder of the potential Badlands ACEC would not be recommended for mineral withdrawal. Thus, the relevant and important values of the area would not receive additional protection from land and realty actions.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Impacts would be similar to those described under Alternative N. There would be no impacts to relevant and important values within the WSA, which is closed to oil and gas leasing. The WSA represents 45% of the potential ACEC. An additional 5% of the potential ACEC is open to leasing subject to major constraints (NSO), which would result in minimal impacts to the relevant and important values, and 8% would be open to leasing with moderate constraints. In the remainder of the area (42%), impacts to relevant and important values from oil and gas leasing could occur due to surface-disturbing activities.

Protection is also provided by laws, rules, and regulations for other resources. Adherence to VRM Class II standards would provide protection for the Class A scenic values. SSS values would receive protection by the ESA, riparian protection zones would provide adequate protection for the riparian values and the relict vegetation values are located within areas of the potential ACEC that would require NSO or closed. In addition, the potential ACEC is in a portion of the RFO identified as having low potential for oil and gas development. Few wells are expected to be drilled in this area in the next 15 to 20 years. Therefore, the potential for impacts to relevant and important values from oil and gas are minimal.

Leasable Minerals—Coal

There are limited coal resources within the potential Badlands ACEC. Under this alternative, the 2,200-acre North Caineville Mesa ACEC would be identified as withdrawn from consideration for leasing for surface coal mining. The remainder of the potential ACEC would be available for consideration for leasing for surface coal mining, which would cause irreparable harm to the relevant and important values if they were present in the area where surface mining occurred. The 46% of the ACEC within the WSA would be managed pursuant to the IMP, which would provide protection from these activities.

Locatable Minerals

Impacts would be the same as those described under Alternative N. There is potential for uranium, vanadium, and copper mineralization within the area. The 36% of the potential ACEC (the area outside the WSA) could be impacted by mineral exploration and development. Locatable mineral exploration and development would be allowed under the General Mining Law in these areas. FLPMA requires BLM to regulate mining activities to prevent undue and unnecessary environmental degradation to resources. This would minimize impacts from mining activities to all relevant and important values. Difficulty of access due to location makes development unlikely within the next 15 years. Additionally, within a designated ACEC, federal regulations (43 CFR 3809.11 (c) (3)) require that a plan of operations be submitted for any operation causing surface disturbance greater than casual use. This regulation would mitigate the impacts of mining exploration and development on relevant and important values within the North Caineville Mesa ACEC which is located within the potential Badlands ACEC.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N. The potential ACEC encompasses 40,400 acres of the Mount Ellen—Blue Hills WSA. Within this area (45% of the potential ACEC), continued management of the WSA under the IMP would limit surface-disturbing actions that could adversely impact relevant and important values. WSAs are closed to oil and gas leasing, precluding any impact from oil and gas development, and they are managed as VRM Class I, which further restricts surface-disturbing activities and would provide protection to all the relevant and important values located within the WSA.

Wild and Scenic Rivers

Impacts would be the same as those described under Alternative A. Under the Proposed RMP, the Fremont River between Capitol Reef National Park and the Caineville Ditch diversion would not be recommended as suitable, with no special management to protect its outstandingly remarkable values and free-flowing nature. This would provide no additional protection to the potential Badlands ACEC's relevant and important values.

Areas of Critical Environmental Concern

Under the Proposed RMP, the potential Badlands ACEC would not be designated, and no special management prescriptions would be implemented to specifically protect the relevant and important values of that area. The existing North Caineville Mesa ACEC (2,200 acres) would continue to be designated to protect the relict vegetation relevant and important value. The portion of the potential Badlands ACEC located within the Mount Ellen—Blue Hills WSA would continue to receive adequate protection for all relevant and important values located within that area under the IMP. Resource decisions related to riparian protection zones, SSS, and restricting OHV use to designated routes and a small, managed open area provide protection to the relevant and important values. The potential for impacts associated with cross-country OHV use would be reduced significantly under this alternative when compared with Alternatives N and A.

Alternative C

Impacts from Visual Resources

Impacts would be similar to those described under the Proposed RMP. As shown in Table 4-60, the VRM class designations between the two alternatives are very similar, the main difference being that Alternative C designates all Class A scenery outside of the WSA as VRM Class II and designates fewer VRM Class IV areas, which would provide more protection to relevant and important values by allowing less surface-disturbing activities.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative N.

Impacts from Non-WSA Lands with Wilderness Characteristics

Impacts would be the same as those described under Alternative N.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

Under this alternative, the portion of the potential ACEC south of Highway 24 is included in the Henry Mountains SRMA. This SRMA would be managed for a combination of semi-primitive and motorized recreation. Managing recreation use would help protect relevant and important values from ground-disturbing activities associated with recreation.

Impacts from Travel Management

Alternative C would close 93% of the area to OHVs (including the mesa tops) and would limit OHVs to designated routes in the remaining 7% of the area. This would protect relevant and important values from ground disturbances caused by this activity.

Impacts from Lands and Realty

Impacts would be similar to those described under Alternative N, except that substantially more acres would be recommended for withdrawal under Alternative C. Under Alternative C, 27,800 acres would be recommended for withdrawal from mineral entry, which would protect scenic values as well as other values, by precluding those areas from surface-disturbing activities associated with locatable mineral development.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Under this alternative, the entire ACEC would be closed to oil and gas leasing, precluding any impacts from this type of activity.

Leasable Minerals—Coal

Under this alternative, the potential Badlands ACEC would be closed to leasing for coal resources, precluding any impacts from this type of activity.

Locatable Minerals

There is potential for uranium, vanadium, and copper mineralization within the area. Under Alternative C, 13% of the potential ACEC could be impacted by mineral exploration and development. However, difficulty of access makes development unlikely within the next 15 years. Additionally, within a

designated ACEC, federal regulations (43 CFR 3809.11 (c) (3)) require that a plan of operations be submitted for any operation causing surface disturbance greater than casual use. This regulation would mitigate the impacts of mining exploration and development on relevant and important values.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

The Fremont River between Capitol Reef National Park and the Caineville Ditch diversion (4 miles) was determined to be an eligible WSR and recommended as suitable under this alternative. Managing to protect the river's outstandingly remarkable values would also benefit the scenic and riparian relevant and important values within the river corridor portion of the potential Badlands ACEC.

Areas of Critical Environmental Concern

Under Alternative C, the Badlands ACEC and RNA would be designated on 88,900 acres of public land to protect and provide special management for the relevant and important values. In addition to the management direction associated with Alternative C related to other resource programs (described above), designating the ACEC would allow no uses that would cause irreparable damage to relevant and important values.

Alternative D

Impacts from Visual Resources

This alternative provides the most protection to scenic resources of all the alternatives. Ninety-four percent of the potential ACEC would be designated as either VRM Class I or II, which would preserve or retain the existing character of the landscape by restricting surface-disturbing activities. The remaining 6% of the area, which does not contain Class A scenery, would be designated as either VRM Class III or IV. Scenic values in these areas could be adversely impacted because the objectives for these VRM classes allow actions that can result in moderate-to-major landscape modification and therefore greater surface disturbance.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative N.

Impacts from Non-WSA Lands with Wilderness Characteristics

Portions of the Mount Ellen—Blue Hills (6,200 acres), Muddy Creek/Crack Canyon (17,700 acres), Red Desert (830 acres), and Wild Horse Mesa (10,600 acres) non-WSA lands with wilderness characteristics lie within the 88,900-acre potential Badlands ACEC. Under Alternative D, protecting the non-WSA lands with wilderness characteristics within the Badlands ACEC would provide protection for relevant and important values on 35,330 acres. Specifics are disclosed in the visual resource management, travel management, lands and realty, and minerals discussions in this section.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

Under Alternative D, portions of the Badlands Potential RNA ACEC would be included in the Capitol Reef Gateway, Henry Mountains, and San Rafael Swell SRMAs. The proposed management direction of

these SRMAs, with its emphasis on primitive and semi-primitive recreation, would help protect relevant and important values from ground-disturbing activities associated with some types of motorized recreation.

Impacts from Travel Management

Alternative D would best protect relevant and important values from cross-country OHV use among the alternatives. Ninety-five percent of the area would be closed to OHVs and 5% of the ACEC would limit OHVs to designated routes, protecting relevant and important values from ground disturbances caused by this activity.

Impacts from Lands and Realty

Impacts would be similar to those described under Alternative C, except that a much larger area (42,700 acres) would be recommended for withdrawal under Alternative D to protect scenic values. This alternative would best protect the relevant and important values from the ground-disturbing activities associated with mining exploration and development.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Impacts would be the same as those described under Alternative C.

Leasable Minerals—Coal

Impacts would be the same as those described under Alternative C.

Locatable Minerals

There is potential for uranium, vanadium, and copper mineralization within the area. Under Alternative D, 6% of the potential ACEC (the area outside the WSA) could be impacted by mineral exploration and development. However, difficulty of access due to location of the WSA makes development unlikely within the next 15 years. Additionally, within a designated ACEC, federal regulations (43 CFR 3809.11 (c) (3)) require that a plan of operations be submitted for any operation causing surface disturbance greater than casual use. This regulation would mitigate the impacts of mining exploration and development on relevant and important values.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Impacts would be the same as those described under Alternative C.

Areas of Critical Environmental Concern

Impacts would be the same as those described under Alternative C.

Bull Creek Potential ACEC

The Bull Creek Potential ACEC encompasses 4,800 acres of public lands located in Wayne County several miles south of Hanksville. The relevant and important value is cultural resources (archaeological). None of the proposed decisions would threaten archaeological values with irreparable harm, and the archaeological values could be protected without designating the area as an ACEC. However, designating

the as an ACEC would enhance those values. Impacts to the relevant and important value of this ACEC could occur from the following resource management programs:

- Cultural Resources
- Travel Management
- Minerals and Energy
- Special Designations.

Other programs were determined to have little or no impact on the archaeological values of this potential ACEC.

Alternative N: No Action

Impacts from Cultural Resources

Under Alternative N, management of the Bull Creek Archaeological District would be consistent with properties listed on the National Register of Historic Places, which would protect the values for which the district was nominated. Under all alternatives, no surface-disturbing activities would be authorized in the Bull Creek Archaeological District other than archaeological research.

Impacts from Travel Management

Under Alternative N, continuing to limit vehicles to designated routes would protect the cultural resources from surface disturbance caused by cross-country motor vehicle travel.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Under Alternative N, the Bull Creek Archaeological District would continue to be open to leasing subject to major constraints (NSO), precluding surface disturbances.

Locatable Minerals

Under Alternative N, locatable mineral exploration and development would be allowed under the General Mining Law. FLPMA requires BLM to regulate mining activities to prevent undue and unnecessary environmental degradation to resources, including cultural values. This would minimize impacts of mining activities on cultural resources. Mining activities have not occurred within the area and are not expected in the future.

Impacts from Special Designations

Areas of Critical Environmental Concern

The potential Bull Creek ACEC would not be designated under this alternative, and no special management prescriptions would be implemented to specifically protect the relevant and important values of the area. Existing laws, rules, and regulations, as well as management decisions for cultural and travel management would adequately protect the relevant and important cultural values.

Alternative A

Impacts from Cultural Resources

Impacts would be the same as those described under Alternative N.

Impacts from Travel Management

Under this alternative, motorized use within the potential ACEC and surrounding area would be limited to designated routes. This would protect the cultural resources from potential surface disturbance associated with cross-country motor vehicle travel.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Impacts would be the same as those described under Alternative N.

Locatable Minerals

Impacts would be the same as those described under Alternative N.

Impacts from Special Designations

Areas of Critical Environmental Concern

Impacts would be the same as those described under Alternative N.

Proposed RMP

Impacts from Cultural Resources

Under the Proposed RMP, motorized use within the potential Bull Creek Archaeological ACEC and surrounding area would be limited to designated routes. This would protect the relevant and important cultural values from potential surface disturbance associated with cross-country motor vehicle travel.

Impacts from Travel Management

Under the Proposed RMP, motorized use within the potential ACEC and surrounding area would be limited to designated routes. This would protect the relevant and important cultural values from potential surface disturbance associated with cross-country motor vehicle travel.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Under the Proposed RMP, the potential Bull Creek Archaeological District would continue to be open to leasing subject to major constraints (NSO), precluding surface disturbances which would provide adequate protection to the relevant and important cultural value.

Locatable Minerals

Under the Proposed RMP, locatable mineral exploration and development would be allowed under the General Mining Law. FLPMA requires BLM to regulate mining activities to prevent undue and unnecessary environmental degradation to resources, including cultural values. This would minimize impacts of mining activities on cultural resources. Mining activities have not occurred within the area and are not expected in the future.

Impacts from Special Designations

Areas of Critical Environmental Concern

The potential Bull Creek Archaeological ACEC would not be designated under the Proposed RMP, and no special management prescriptions would be implemented to specifically protect the relevant and important cultural value of the area. Existing laws, rules, and regulations, as well as management decisions for cultural, travel and minerals and energy management would adequately protect the relevant and important cultural value.

Alternative C

Impacts from Cultural Resources

Under Alternative C, special management for the ACEC would include the following prescriptions: increase public awareness of cultural resource values; increase law enforcement presence; and, if necessary, install fencing or other direct protection of important sites. These prescriptions would provide added protection for the archaeological district.

Impacts from Travel Management

Impacts would be the same as those described under Alternative A.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Impacts would be the same as those described under Alternative N.

Locatable Minerals

Impacts would be similar as those described under Alternative N. Additionally, designating the area as an ACEC under this alternative would require the filing of a plan of operation and analyzing impacts with a site-specific environmental assessment (EA) before mineral development would be allowed.

Impacts from Special Designations

Areas of Critical Environmental Concern

Under Alternative C, designating the Bull Creek ACEC would provide increased management emphasis for protecting cultural resources. Special management for the ACEC would include the following prescriptions: increase public awareness of cultural resource values; increase law enforcement presence; and, if necessary, install fencing or other direct protection of important sites.

Alternative D

Impacts from Cultural Resources

Special management under Alternative D would increase public awareness of cultural resource values and increase law enforcement presence, but no fencing would be allowed in non-WSA lands with wilderness characteristics, which may not protect the archaeological district as much as Alternative C.

Impacts from Travel Management

In Alternative D, the 320 acres of the potential Bull Creek Archaeological District ACEC overlapping non-WSA lands with wilderness characteristics would be closed to OHV use, providing additional protection to cultural resources.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Impacts would be the same as those described under Alternative N.

Locatable Minerals

Impacts would be the same as those described under Alternative C.

Impacts from Special Designations

Areas of Critical Environmental Concern

Under Alternative D, designating the Bull Creek ACEC would provide increased management emphasis for protecting cultural resources but to a lesser extent than Alternative C. Special management under Alternative D would increase public awareness of cultural resource values and increase law enforcement presence, but no fencing would be allowed in non-WSA lands with wilderness characteristics.

Dirty Devil/North Wash Potential ACEC

The Dirty Devil/North Wash Potential ACEC includes the Dirty Devil River and side canyons and totals 205,300 acres. It is located southeast of Hanksville in Wayne and Garfield counties. Sixty-four percent of the potential ACEC is within WSAs, where management under the IMP would protect all relevant and important values from surface-disturbing activities. The potential ACEC includes the existing Beaver Wash ACEC; the Dirty Devil, French Spring/Happy Canyon, and Fiddler Butte Wilderness Study Areas; and the Dirty Devil River, Beaver Wash Canyon, Larry Canyon, No Mans Canyon, Robbers Roost Canyon, Sams Mesa Box Canyon, and Twin Corral Box Canyon eligible WSRs. Relevant and important values include scenic, cultural, paleontological, wildlife (bighorn sheep), and SSS (plant species and the Mexican spotted owl).

OHV use could adversely impact the scenic, cultural, wildlife, and SSS values if OHVs travel where these values are present. Plants could be crushed, damaged, or destroyed; cultural resources could be damaged or destroyed; and new trails could be established in scenic areas. OHV use could also disturb Desert bighorn sheep and special status animal species. Impacts to the relevant and important value of this ACEC could occur from the following resource management programs:

- Vegetation
- Cultural Resources
- Visual Resources
- Special Status Species
- Fish and Wildlife
- Fire and Fuels Management
- Non-WSA Lands with Wilderness Characteristics
- Livestock Grazing
- Recreation
- Travel Management
- Lands and Realty
- Minerals and Energy
- Special Designations.

Other programs were determined to have little or no impact on the relevant and important values of this potential ACEC.

Alternative N: No Action

Impacts from Vegetation

Under Alternative N, no surface-disturbing activities would be allowed within 500 feet of riparian areas unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the desert

riparian ecosystem from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment.

Impacts from Cultural Resources

Under Alternative N, no special management prescriptions for cultural resources (other than that already afforded by existing laws) would be provided.

Impacts from Visual Resources

Visual resource management classes within the potential ACEC vary by alternative, as shown in Table 4-63. The higher VRM Classes (I and II) would better protect the scenic values and, by limiting surface-disturbing activities, also benefit other relevant and important values. Scenic relevant and important values were found to be present within 60% of the potential ACEC, generally the canyons. Under Alternative N, 74% of the ACEC is designated as VRM Class II. Per BLM policy, the 64% of the ACEC within WSAs would continue to be managed as VRM Class I. VRM Class I and II management would provide adequate protection to the Class A scenery occurring within the ACEC.

Table 4-63. VRM Class Designations within Dirty Devil/North Wash Potential ACEC

		Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Class I	Acres	0	130,700	130,700	130,700	203,900
	% ACEC	0%	64%	64%	64%	99%
Class II	Acres	151,300	0	46,300	47,600	900
	% ACEC	74%	0%	22%	23%	<1%
Class III	Acres	22,000	64,800	5,700	5,400	100
	% ACEC	11%	31%	3%	3%	<1%
Class IV	Acres	32,000	9,800	22,600	21,600	400
	% ACEC	15%	5%	11%	10%	<1%

Impacts from Special Status Species

Under Alternative N, management actions such as prohibiting the destruction, adverse modification, or fragmentation of listed species habitat; maintaining the integrity of SSS habitat; and habitat improvements would benefit SSS.

Impacts from Fish and Wildlife

Managing Desert bighorn sheep in accordance with the existing habitat management plan (HMP) would benefit this relevant and important value. The HMP was specifically prepared to direct and provide for management of this wildlife species. Prohibiting the changing in class of livestock from cattle to sheep would protect the Desert bighorn sheep from diseases that could be contracted from domestic sheep. Under this alternative, implementing less seasonal or spatial restrictions on human presence or surface-disturbing activity could result in greater impacts to Desert bighorn sheep during critical periods, such as lambing.

Impacts from Fire and Fuels Management

Although unlikely due to vegetation within Mexican spotted owl habitats, decisions under this alternative would allow for habitat manipulations to improve habitat condition for this species. Any fuels activities would be required to adhere to the Endangered Species Act and, for portions of the potential ACEC within WSAs, the IMP.

Impacts from Non-WSA Lands with Wilderness Characteristics

Portions of the Dirty Devil/French Spring (58,100 acres), Fiddler Butte (12,000 acres), Flat Tops (10 acres), and Little Rockies (3,200 acres) non-WSA lands with wilderness characteristics lie within the 205,300-acre potential Dirty Devil/North Wash ACEC. No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under Alternative N, resulting in no additional protection for relevant and important values.

Impacts from Livestock Grazing

Under Alternative N, the majority of the potential ACEC would be available for livestock grazing. The Big Ridge would continue to be unavailable for grazing. The North Wash drainage and Beaver Wash Canyon would continue to be unavailable for grazing, which would provide additional protection of the desert riparian ecosystem. Grazing would be managed in accordance with the *Fundamentals of Rangeland Health* and *Standards and Guidelines for Grazing Administration*, which would minimize impacts to the relevant and important values of the area.

Impacts from Recreation

Under Alternative N, no SRMAs are proposed, so there would be no impacts to relevant and important values. However, visitor use is expected to increase throughout the RFO. Under this alternative, the entire RFO (with the exception of Yuba Reservoir, which is managed by the Fillmore FO) is identified and managed as an ERMA. Management of recreation in ERMAs is restricted to custodial actions only, with no special prescriptions identified that would limit or control recreational activities. As recreation uses increase and new types of recreational activities develop, having no SRMA management plan in place to manage that use could result in impacts to relevant and important values. The remoteness of the area and 64% of the potential ACEC being located within WSAs would continue to provide protection from recreational uses, such as cross-country motorized travel, within those portions of the ACEC.

Impacts from Travel Management

OHV area designations vary by alternative, as shown in Table 4-64. Alternative N would continue to allow cross-country vehicle travel within 31% of the potential ACEC, which could adversely impact the scenic, cultural, wildlife, and special status plant species values if the OHVs traveled where these values were present. Plants could be crushed, damaged, or destroyed; cultural resources could be damaged or destroyed; and new trails could be established in scenic areas. OHV use could also disturb Desert bighorn sheep and special status animal species. Thirty percent of the area would limit OHV use to designated routes, protecting relevant and important values from ground disturbance caused by cross-country OHV use; 39% of the area would be closed to OHV use, which would result in no impacts from motorized vehicles.

Table 4-64. OHV Area Designations within Dirty Devil/North Wash Potential ACEC

		Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Open	**Acres**	64,100	0	0	0	0

		Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
	% Area	31%	0%	0%	0%	0%
Limited	Acres	61,500	205,300	99,600	600	500
	% Area	30%	100%	49%	<1%	<1%
Closed	Acres	79,700	0	105,700	204,700	204,800
	% Area	39%	0%	51%	100%	100%

Impacts from Lands and Realty

Under this alternative, the portion of the potential ACEC outside WSAs would not be recommended for mineral withdrawal. Thus, the relevant and important value of the area would not receive additional protection from land and realty actions.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Lands open to oil and gas leasing vary by alternative, as shown in Table 4-65. Under all alternatives, there would be no impacts to relevant and important values within the WSAs, which are closed to oil and gas leasing by law. WSAs represent 64% of the potential ACEC. Under Alternative N, 29% of the potential ACEC would be open to oil and gas leasing under standard terms, and 7% would be open under controlled surface use or timing stipulations. The seasonal restriction would prohibit exploration and development from April 15 through June 15 to reduce impacts to bighorn sheep during the lambing season. Among the alternatives, Alternative N would have the greatest potential of impacting relevant and important values. However, the potential ACEC is in a portion of the lands managed by the RFO identified as having low development potential for oil and gas leasing. Few, if any, wells are expected to be drilled in this area in the next 15 to 20 years. Thus, it is unlikely that surface-disturbing activities from oil and gas development would occur that would impact the relevant and important values of this potential ACEC.

Table 4-65. Leasing Stipulations within Dirty Devil/North Wash Potential ACEC

		Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Standard Lease Terms	Acres	59,200	5,800	3,600	400	200
	% Area	29%	3%	2%	<1%	<1%
Controlled Surface Use or Timing Stipulations	Acres	15,300	68,800	21,800	7,200	100
	% Area	7%	33%	11%	4%	<1%
No Surface Occupancy	Acres	100	0	49,300	32,200	700
	% Area	<1%	0%	24%	16%	<1%
Closed	Acres	130,700	130,700	130,600	165,500	204,300
	% Area	64%	64%	64%	80%	100%

Locatable Minerals

Under Alternative N, 36% of the potential ACEC (the area outside the WSAs) could be impacted by mineral exploration and development. There is potential for uranium, vanadium, and copper mineralization within the area. There has been increasing interest in uranium adjacent to the Dirty Devil River corridor in the vicinity of Poison Spring and North Hatch Canyons, which could result in increased mineral-related activities within the potential ACEC. Locatable mineral exploration and development would be allowed under the General Mining Law. FLPMA requires BLM to regulate mining activities to prevent undue and unnecessary environmental degradation to resources. Mitigation such as minimizing visual impacts and avoiding sensitive seasons or areas for SSS would be addressed in site-specific analysis as proposals are reviewed. These mitigation measures would reduce, but would not eliminate, impacts to relevant and important values.

Salable Minerals

Under all alternatives, there would be no impacts to relevant and important values within the WSAs, which would be managed under the IMP. Under Alternative N, the effects of mineral material sales on relevant and important values would be determined on a case-by-case basis. Impacts to relevant and important values would be analyzed within site-specific NEPA and minimization measures identified as necessary.

Impacts from Special Designations

Wilderness Study Areas

The potential ACEC encompasses 130,700 acres of wilderness study areas, including all of the Dirty Devil and French Spring/Happy Canyon WSAs and part of the Fiddler Butte WSA. Within the WSAs, which represent 64% of the potential ACEC, relevant and important values would be protected from ground-disturbing activities by management under the IMP to protect the wilderness characteristics of the area.

Wild and Scenic Rivers

WSR designations, by alternative, are shown in Table 4-66. Seven eligible WSRs are within the potential ACEC and recommended suitable under Alternatives C and D: Dirty Devil River, Beaver Wash Canyon, Larry Canyon, No Mans Canyon, Robbers Roost Canyon, Sams Mesa Box Canyon, and Twin Corral Box Canyon. Protecting the river-related outstandingly remarkable values of all segments under Alternative N would also protect relevant and important values within about 19% of the potential ACEC. However, most of these river segments are within WSAs, so management to protect the river values would add little or no additional protection for the ACEC values over what is afforded by WSA management direction.

Table 4-66. Eligible/Suitable Wild and Scenic Rivers within Dirty Devil/North Wash Potential ACEC

		Eligible	Suitable		
Eligible/ Suitable Rivers		**Alternative N (No Action)**	**Alternative A**	**Proposed RMP**	**Alternatives C and D**
Eligible/ Suitable Rivers	**# of Segments**	7	0	0	7
	River Miles	121	0	0	121
	Acres	38,400	0	0	38,400

		Eligible	Suitable		
Eligible/ Suitable Rivers		Alternative N (No Action)	Alternative A	Proposed RMP	Alternatives C and D
	% Potential ACEC	19%	0%	0%	19%

Areas of Critical Environmental Concern

Under Alternative N, the existing Beaver Wash ACEC (4,800 acres) would continue to be designated to protect its unique desert riparian ecosystem. Management according to the IMP within the 64% of the potential ACEC within the WSAs and management of the eligible WSR corridors would provide protection of the relevant and important values within those areas.

Alternative A

Impacts from Vegetation

Under Alternative A, no surface-disturbing activities would be allowed within 330 feet on each side of the stream or the 100-year floodplain, whichever is greater, unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. Although the buffer zone is smaller than in Alternatives N, C, and D, it would still protect the desert riparian ecosystem from surface-disturbing activities. This decision could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment.

Impacts from Cultural Resources

Impacts would be the same as those described under Alternative N.

Impacts from Visual Resources

Alternative A would provide less protection for the scenic values of the potential ACEC than the other alternatives. The 64% of the ACEC within WSAs would be designated as VRM Class I, which would prevent surface-disturbing activities that would result in changes to the landscape, thus providing protection to the scenic relevant and important values. The remainder of the ACEC, including some areas having Class A scenery, would be designated as VRM Classes III and IV, which would allow activities to take place that could impact the scenic values.

Impacts from Special Status Species

As with Alternative N, in Alternative A, management actions such as prohibiting the destruction, adverse modification, or fragmentation of listed species habitat; maintaining the integrity of SSS habitat; and habitat improvements would benefit SSS. Under this alternative, additional strategies (such as utilizing seasonal and spatial buffers for surface-disturbing activities and complying with raptor protection guidelines for powerline construction) would be employed to protect raptors and their habitat. These actions would minimize or eliminate impacts to the SSS relevant and important value.

Impacts from Fish and Wildlife

Impacts would be the same as those described under Alternative N.

Impacts from Fire and Fuels Management

Impacts would be the same as those described under Alternative N.

Impacts from Non-WSA Lands with Wilderness Characteristics

Impacts would be the same as those described under Alternative N.

Impacts from Livestock Grazing

As per the fish and wildlife management decisions, the change in kind of livestock from cattle to domestic sheep would be prohibited in those allotments with bighorn sheep habitat identified in the BLM Desert Bighorn Sheep HMP. This would provide protection for the desert bighorn sheep relevant and important value. Under Alternative A, the majority of the potential ACEC would be available for livestock grazing. The North Wash drainage and the Big Ridge would continue to be unavailable for grazing. Grazing would be managed in accordance with the *Fundamentals of Rangeland Health* and *Standards and Guidelines for Grazing Administration* which would minimize impacts to the relevant and important values of the area.

Impacts from Recreation

Under Alternative A, the Dirty Devil SRMA (290,000 acres) would encompass the northern two-thirds of the Dirty Devil/North Wash Potential ACEC. The Dirty Devil SRMA management emphasis on primitive and semi-primitive recreation would complement the relevant and important values by focusing recreational use and limiting development.

Impacts from Travel Management

Under all action alternatives, adverse impacts from cross-country motorized travel would be virtually eliminated. Under Alternative A, vehicles would be limited to designated routes within the entire potential ACEC. Limiting OHV use would reduce the impacts to relevant and important values because use would be confined to designated routes, although there could be some impacts if relevant and important values were located on or adjacent to open routes.

Impacts from Lands and Realty

Impacts would be the same as those described under Alternative N.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Impacts would be similar to those described under Alternative N, except that fewer acres would be open with standard leasing terms. Under Alternative A, 3% of the potential ACEC would be open to oil and gas leasing under standard terms, and 33% would be open under controlled surface use or timing stipulations. Compared with Alternative N, Alternative A would reduce potential impacts to bighorn sheep by placing more land under seasonal restrictions.

Locatable Minerals

Impacts would be the same as those described under Alternative N.

Salable Minerals

Impacts would be the same as those described under Alternative N.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Under this alternative, the seven eligible WSRs within the potential ACEC would not be recommended as suitable, with no special management to protect their outstandingly remarkable values and free-flowing nature. This would provide no additional protection to the areas' relevant and important values. However, most of these river segments are within WSAs, so management to protect the river values would add little or no additional protection for the ACEC values over what is afforded by WSA management direction.

Areas of Critical Environmental Concern

Under Alternative A, no ACEC would be designated. Management according to the IMP within the 64% of the potential ACEC within the WSAs would provide protection of the relevant and important values within those areas.

Proposed RMP

Impacts from Vegetation

Under the Proposed RMP, no surface-disturbing activities would be allowed within 330 feet on each side of the stream or the 100-year floodplain, whichever is greater, unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. Although the buffer zone is smaller than in Alternatives N, C, and D, it would still protect the riparian resources from surface-disturbing activities which indirectly benefits the wildlife and SSS relevant and important values of the potential ACEC. This decision could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment.

Impacts from Cultural Resources

Impacts would be the same as those described under Alternative N. Under the Proposed RMP, no special management prescriptions for cultural resources (other than that already afforded by existing laws) would be provided.

Impacts from Visual Resources

Under the Proposed RMP, 86% of the potential ACEC would be designated as VRM Classes I or II. These designations would adequately protect the scenic relevant and important values by limiting surface-disturbing activities within the majority of the ACEC, including the canyons identified for Class A scenery.

Impacts from Special Status Species

As with Alternatives N and A, management actions identified within the Proposed RMP, such as prohibiting the destruction, adverse modification, or fragmentation of listed species habitat; maintaining the integrity of SSS habitat; and habitat improvements would benefit SSS. Under the Proposed RMP, additional strategies (such as utilizing seasonal and spatial buffers for surface-disturbing activities and complying with raptor protection guidelines for powerline construction) would be employed to protect raptors and their habitat. These actions would minimize or eliminate impacts to the SSS relevant and important value within the potential ACEC.

Impacts from Fish and Wildlife

Management according to the IMP within the 64% of the potential ACEC within the WSAs would provide protection of the wildlife (bighorn sheep) relevant and important values within those areas. In addition, managing desert bighorn sheep in accordance with the existing habitat management plan (HMP) would benefit and provide protection for the wildlife (bighorn sheep) relevant and important value of the Dirty Devil/North Wash ACEC. The potential Dirty Devil/North Wash ACEC was defined by Class A Scenery, Mexican spotted owl suitable habitat and the desert bighorn crucial yearlong habitat within the

nominated areas. The desert bighorn sheep HMP includes all of the desert bighorn crucial yearlong habitat identified for relevant and important values, plus additional acres of the potential ACEC. The HMP was specifically prepared to direct and provide for management of this wildlife species. Prohibiting the change in class of livestock from cattle to sheep would protect the Desert bighorn sheep from diseases that could be contracted from domestic sheep. Under this alternative, greater seasonal and spatial restrictions on human presence or surface-disturbing activities could result in benefits to Desert bighorn sheep because they would be afforded protection from disturbances during critical periods. Other SSS could also benefit if they were in the same areas as the Desert bighorn sheep.

Impacts from Fire and Fuels Management

Impacts would be the same as those described under Alternative N. Although unlikely due to vegetation within Mexican spotted owl habitats, decisions under the Proposed RMP would allow for habitat manipulations to improve habitat condition for this species. Any fuels activities would be required to adhere to the Endangered Species Act and, for portions of the potential ACEC within WSAs, the IMP which would provide adequate protection for the SSS relevant and important value of the potential Dirty Devil ACEC.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under the Proposed RMP, portions of the Dirty Devil/French Spring (6,000 acres) non-WSA lands with wilderness characteristics would be managed for wilderness characteristics. Management prescriptions would protect scenic values, reduce or eliminate surface disturbance, and retain public lands in federal ownership. Approximately 550 acres of the Dirty Devil/French Springs non-WSA lands managed for wilderness characteristics would overlap with the potential Dirty Devil/North Wash ACEC (less than 1% of the potential ACEC) which would provide additional protection for relevant and important values within those areas.

Impacts from Livestock Grazing

Impacts would be similar to those described under Alternative A. In addition, no domestic sheep and goat grazing east of Capitol Reef National Park, subject to existing livestock grazing permits would be allowed, providing additional protection for the wildlife (bighorn sheep) relevant and important value of the potential Dirty Devil/North Wash ACEC.

Impacts from Recreation

Under the Proposed RMP, the Dirty Devil SRMA (290,000 acres) would encompass the northern two-thirds of the Dirty Devil/North Wash Potential ACEC. The Dirty Devil SRMA management emphasis on primitive and semi-primitive recreation would complement the relevant and important values of the potential ACEC by focusing recreational use and limiting development.

Impacts from Travel Management

Under the Proposed RMP, vehicles would be limited to designated routes within 49% of the potential ACEC, and the remaining 51% would be closed to motor vehicles. Limiting OHV use would reduce the impacts to all relevant and important values because use would be confined to designated routes. Although there could be some surface disturbance and associated impacts to relevant and important values located on or adjacent to open routes, the potential would be minimized. In closed areas, impacts to relevant and important values from OHV use would be eliminated.

Impacts from Lands and Realty

Impacts would be the same as those described under Alternative N. Under the Proposed RMP, the portion of the potential ACEC outside WSAs (46%) would not be recommended for mineral withdrawal. Thus,

the relevant and important values of the area would not receive additional protection from land and realty actions.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Impacts would be similar to those described under Alternatives N and A, except that fewer acres would be open to leasing subject to standard terms and conditions and more acres would be open to leasing subject to major constraints (NSO) or closed to leasing. Under the Proposed RMP, only 2% of the potential ACEC would be open to oil and gas leasing subject to standard terms and conditions, 11% open to leasing subject to moderate constraints (timing limitation, CSU), 24% open to leasing subject to major constraints (NSO), and 64% closed to leasing. Compared with Alternatives N and A, the Proposed RMP would reduce potential impacts to all relevant and important values.

Locatable Minerals

Under the Proposed RMP, 46% of the potential ACEC (the area outside the WSAs) could be impacted by mineral exploration and development. There is potential for uranium, vanadium, and copper mineralization within the area. There has been increasing interest in uranium adjacent to the Dirty Devil River corridor in the vicinity of Poison Spring and North Hatch Canyons, which could result in increased mineral-related activities within the potential ACEC. Locatable mineral exploration and development would be allowed under the General Mining Law. FLPMA requires BLM to regulate mining activities to prevent undue and unnecessary environmental degradation to resources. Mitigation such as minimizing visual impacts and avoiding sensitive seasons or areas for SSS would be addressed in site-specific analysis as proposals are reviewed. These mitigation measures would reduce, but would not eliminate, impacts to relevant and important values.

Salable Minerals

Under the Proposed RMP, impacts would be similar to those described under Alternative N, except that no material sales would be allowed in Class A scenery areas, resulting in no surface disturbance and no impact to the relevant and important scenic values.

Impacts from Special Designations

Wilderness Study Areas

The potential ACEC encompasses 130,700 acres of wilderness study areas, including all of the Dirty Devil and French Spring/Happy Canyon WSAs and part of the Fiddler Butte WSA. Within the WSAs, which represent 64% of the potential ACEC, all relevant and important values would be protected from ground-disturbing activities by management under the IMP to protect the wilderness characteristics of the area.

Wild and Scenic Rivers

Under the Proposed RMP, the seven eligible WSRs within the potential Dirty Devil/North Wash ACEC would not be recommended as suitable, with no special management to protect their outstandingly remarkable values and free-flowing nature. This would provide no additional protection to the areas' relevant and important values. However, most of these river segments are within WSAs, so management to protect the river values would add little or no additional protection for the ACEC values over what is afforded by WSA management direction.

Areas of Critical Environmental Concern

Under the Proposed RMP, the potential Dirty Devil/North Wash ACEC would not be designated, and no special management prescriptions would be implemented to specifically protect the relevant and important values of that area. Management according to the IMP within the 64% of the potential ACEC within the WSAs and management prescriptions for the Dirty Devil/French Spring non-WSA lands within the potential ACEC would provide protection for all the relevant and important values within those areas. Existing laws, rules, and regulations, as well as other resource decisions within this alternative for VRM, SSS, fish and wildlife, travel, and minerals management would adequately protect or mitigate potential impacts to the scenic, cultural, paleontological, wildlife and SSS relevant and important values of the potential ACEC.

Alternative C

Impacts from Vegetation

Under Alternative C, no surface-disturbing activities would be allowed within 660 feet of riparian areas unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the desert riparian ecosystem from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment.

Impacts from Cultural Resources

Under Alternative C, special management for the ACEC would include the following prescriptions: increase public awareness of cultural resource values; increase law enforcement presence; and if necessary, install fencing or other direct protection of important sites. These prescriptions would provide added protection for cultural resources in the area.

Impacts from Visual Resources

Impacts would be similar to those described under the Proposed RMP, except that an additional 1% of the ACEC, 87% total, would be protected by VRM Class I and II designations.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative A.

Impacts from Fish and Wildlife

Impacts would be the same as those described under the Proposed RMP.

Impacts from Fire and Fuels Management

Special management prescriptions associated with the ACEC (designated under Alternatives C and D) would allow no prescribed or wildland fire use in Mexican spotted owl core and nest protection areas. In addition, all wildland fires that threaten Mexican spotted owl core areas and nest protection areas would be suppressed. While these actions would minimize short-term loss of habitat from fire, these decisions would preclude habitat manipulations to improve habitat condition, which could impact the Mexican spotted owl in the long term. However, habitat manipulation projects would be limited within the area due to vegetation types and WSAs.

Impacts from Non-WSA Lands with Wilderness Characteristics

Impacts would be the same as those described under Alternative N.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

Under Alternative C, an expanded Dirty Devil SRMA would encompass all of the potential ACEC. The Dirty Devil SRMA management emphasis on primitive and semi-primitive recreation would complement the relevant and important values by focusing recreational use and limiting development. Because the SRMA under Alternatives C and D encompasses the entire potential ACEC, it would best protect relevant and important values from the impacts of recreation use.

Impacts from Travel Management

Under Alternatives C and D, the entire potential ACEC would be closed to OHVs. In closed areas, impacts to relevant and important values from OHV use would be eliminated.

Impacts from Lands and Realty

Withdrawing land from mineral entry would benefit all relevant and important values by protecting them from ground-disturbing activities associated with the exploration and development of locatable minerals. A withdrawal of 47,400 acres (23% of the potential ACEC) to protect Class A scenery outside the WSAs is proposed in Alternative C as part of the ACEC designation.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Under Alternative C, 96% of the potential ACEC would either be closed to leasing or open to leasing subject to major constraints (NSO). The remaining 4% would be open to leasing subject to moderate constraints (timing limitation, CSU). Given these restrictions, there would be virtually no impacts to relevant and important values.

Locatable Minerals

Impacts would be similar to those described under Alternative N, except that the portion of the potential ACEC available for locatable minerals exploration and development would be less than Alternatives N, A, and the Proposed RMP. Under Alternative C, 13% of the potential ACEC (the area outside the WSAs and outside proposed withdrawals) could be impacted. In addition, within a designated ACEC, federal regulations (43 CFR 3809.11 (c) (3)) require that a plan of operation be submitted for any operation causing surface disturbance greater than casual use. This regulation would mitigate, but not eliminate, the impacts of mining exploration and development on relevant and important values in Alternatives C and D.

Salable Minerals

Impacts would be the same as those described under the Proposed RMP.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

The seven eligible WSRs within the potential ACEC would be recommended as suitable under Alternative C. Protecting the river-related outstandingly remarkable values of all segments under Alternative C would also protect relevant and important values within about 19% of the potential ACEC. However, most of these river segments are within WSAs, so management to protect the river values

would add little or no additional protection for the ACEC values over what is afforded by WSA management direction.

Areas of Critical Environmental Concern

Under Alternative C, the Dirty Devil/North Wash ACEC would be designated on 205,300 acres of public land to protect and provide special management for the relevant and important values. In addition to management direction associated with Alternative C described above, designating the ACEC would allow no uses that would cause irreparable damage to relevant and important values.

Alternative D

Impacts from Vegetation

Impacts would be the same as those described under Alternative C.

Impacts from Cultural Resources

Special management under Alternative D would increase public awareness of cultural resource values and increase law enforcement presence, but no fencing would be allowed in non-WSA lands with wilderness characteristics, which may not protect the cultural resources in the area as much as Alternative C.

Impacts from Visual Resources

Under Alternative D, 99% of the potential ACEC would be designated as VRM Class I, providing the best protection to the scenic values of the ACEC, even in areas not identified for Class A scenery.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative A.

Impacts from Fish and Wildlife

Impacts would be the same as those described under the Proposed RMP.

Impacts from Fire and Fuels Management

Impacts would be the same as those described under Alternative C.

Impacts from Non-WSA Lands with Wilderness Characteristics

Portions of the Dirty Devil/French Spring (58,100 acres), Fiddler Butte (12,000 acres), Flat Tops (10 acres), and Little Rockies (3,200 acres) non-WSA lands with wilderness characteristics lie within the 205,300-acre potential Dirty Devil/North Wash ACEC. Under Alternative D, protecting the non-WSA lands with wilderness characteristics within the Dirty Devil/North Wash ACEC would provide protection for relevant and important values on 73,310 acres. Specifics are disclosed in the visual resource management, travel management, fluid minerals, and mineral withdrawal discussions in this section.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

Impacts would be the same as those described under Alternative C.

Impacts from Travel Management

Impacts would be the same as those described under Alternative C.

Impacts from Lands and Realty

Impacts would be similar to those described under Alternative C, except that more of the potential ACEC would be recommended for withdrawal. A withdrawal of 100,500 acres (49% of the potential ACEC) is proposed under Alternative D to protect non-WSA lands with wilderness characteristics located within the ACEC.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Under Alternative D, virtually all of the potential ACEC would be closed to leasing, precluding any impacts to relevant and important values.

Locatable Minerals

Impacts would be the same as those described under Alternative C.

Salable Minerals

Under Alternative D, no mineral material sales would be allowed within the ACEC, therefore eliminating any potential impacts to relevant and important values.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Impacts would be the same as those described under Alternative C.

Areas of Critical Environmental Concern

Impacts would be the same as those described under Alternative C.

Fremont Gorge/Cockscomb Potential ACEC

The Fremont Gorge/Cockscomb Potential ACEC is located on public lands west of Capitol Reef National Park in the Torrey–Teasdale–Grover area of central Wayne County. The potential ACEC totals 34,300 acres and includes the Fremont Gorge WSA and Fremont Gorge and Fish Creek eligible WSRs. Relevant and important values are cultural, scenic, riparian, plant, and wildlife (mule deer).

Some vegetation manipulation activities, which would benefit the mule deer, could be restricted by vegetation (riparian) decisions, and VRM Class I and II management objectives. Designation of areas as open to OHVs would threaten all relevant and important values, possibly with irreparable damage.

Impacts to the relevant and important values of this ACEC could occur from the following resource management programs:

- Vegetation (Riparian)
- Visual Resources
- Non-WSA Lands with Wilderness Characteristics
- Recreation
- Travel Management

- Lands and Realty
- Minerals and Energy
- Special Designations.

Other programs were determined to have little or no impact on the relevant and important values of this potential ACEC.

Alternative N: No Action

Impacts from Vegetation

Under all alternatives, no surface-disturbing activities would be allowed within identified distances (which vary by alternative) from riparian areas unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the riparian relevant and important values from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment. Under Alternative N, no surface-disturbing activities would be allowed within 500 feet of riparian areas.

Impacts from Visual Resources

Visual resource management classes within the potential ACEC, by alternative, are shown in Table 4-67. The higher VRM classes (I and II) would best protect the scenic values and, by limiting surface-disturbing activities, also benefit the cultural and riparian values. Per BLM policy, the 8% of the ACEC within the Fremont Gorge WSA would continue to be managed as VRM Class I. Scenic relevant and important values were found to be present within 9% of the potential ACEC outside of the WSA. Under Alternative N, all portions of the ACEC outside of the WSA would be designated as VRM Class III or IV, which could result in impacts to the 9% of Class A scenery located outside of the WSA.

Table 4-67. VRM Class Designations within Fremont Gorge/Cockscomb Potential ACEC

		Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Class I	**Acres**	0	2,800	2,800	2,800	18,700
	% ACEC	0%	8%	8%	8%	55%
Class II	**Acres**	2,800	0	2,900	4,700	1,300
	% ACEC	8%	0%	9%	14%	4%
Class III	**Acres**	11,400	15,700	9,000	26,800	14,200
	% ACEC	33%	46%	26%	78%	41%
Class IV	**Acres**	20,100	15,800	19,600	0	0
	% ACEC	59%	46%	57%	0%	0%

Impacts from Non-WSA Lands with Wilderness Characteristics

Portions of the Fremont Gorge (16,000 acres) non-WSA lands with wilderness characteristics lie within the 34,300-acre potential Fremont Gorge/Cockscomb ACEC. No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under Alternative N, resulting in no additional protection for relevant and important values.

Impacts from Recreation

SRMAs within the potential ACEC vary by alternative. No SRMAs are proposed within the potential ACEC in Alternative N, hence there would be no impacts to relevant and important values from SRMA identification under this alternative.

Impacts from Travel Management

OHV area designations within the potential ACEC vary by alternative, as shown in Table 4-68. The ground disturbance caused by cross-country vehicle travel within open areas would adversely impact all relevant and important values. Additionally, vehicle travel cross-country would harass mule deer. Adverse impacts would be the greatest in Alternative N, which designates 85% of the potential ACEC as open to cross-country vehicle use. Adverse impacts would be reduced in the 8% of the ACEC limited to designated routes and would be eliminated in the 7% of the area closed to OHV use.

Table 4-68. OHV Area Designations within Fremont Gorge/Cockscomb Potential ACEC

		Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Open	Acres	29,200	14,700	0	0	0
	% Area	85%	43%	0%	0%	0%
Limited	Acres	2,800	19,600	32,800	11,100	13,900
	% Area	8%	57%	96%	32%	41%
Closed	Acres	2,300	0	1,500	23,200	20,400
	% Area	7%	0%	4%	68%	59%

Impacts from Lands and Realty

No lands within the potential ACEC are identified as available for sale and no withdrawals are proposed under Alternative N. Therefore, there would be no impacts to relevant and important values from lands and realty decisions.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Lands open to oil and gas leasing vary by alternative, as shown in Table 4-69. Alternative N would provide the least protection to relevant and important values by leaving 48% open to oil and gas leasing subject to the standard terms and conditions. Leasing would be open and subject to major constraints (NSO) within 10% of the potential ACEC and closed within 8% of the area, which would eliminate impacts to relevant and important values within those areas. It is important to note that the potential ACEC is within a portion of the lands managed by the RFO identified as having low potential for oil and gas development, so the likelihood of any impact from these activities on any relevant and important value would be small.

Table 4-69. Oil and Gas Leasing Stipulations within Fremont Gorge/Cockscomb Potential ACEC

		Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Standard Lease Terms	Acres	16,400	0	0	0	0
	% Area	48%	0%	0%	0%	0%
Controlled surface use or timing stipulations	Acres	11,600	31,500	29,900	26,700	13,800
	% Area	34%	92%	87%	78%	40%
No Surface Occupancy	Acres	3,500	0	0	3,100	1,600
	% Area	10%	0%	0%	9%	5%
Closed	Acres	2,800	2,800	4,400	4,500	18,900
	% Area	8%	8%	13%	13%	55%

Impacts from Special Designations

Wilderness Study Areas

Managing the Fremont Gorge WSA (8% of the potential ACEC) to protect its wilderness characteristics under the IMP would generally benefit all relevant and important values by limiting ground-disturbing activities.

Wild and Scenic Rivers

WSR designations vary by alternative, as shown in Table 4-70. Two eligible WSR segments are within the potential ACEC: Fremont Gorge (5 miles) and Fish Creek (one-quarter mile). Managing to protect the river-related outstandingly remarkable values of both segments under Alternative N would also protect the relevant and important values within about 5% of the potential ACEC.

Table 4-70. Eligible/Suitable Wild and Scenic Rivers within Fremont Gorge/Cockscomb Potential ACEC

		Eligible	Suitable		
		Alternative N (No Action)	Alternative A	Proposed RMP	Alternatives C and D
Eligible/Suitable Rivers	# of Segments	2	0	1	2
	River Miles	5.25	0	5	5.25
	Acres	1680	0	1600	1680
	% Area	5%	0%	5%	5%

Areas of Critical Environmental Concern

Under Alternative N, no ACEC would be designated. Management according to the IMP within the 8% of the potential ACEC within the Fremont Gorge WSA, and management of the Fremont Gorge and Fish Creek eligible WSRs would provide protection of the relevant and important values within those areas.

Alternative A

Impacts from Vegetation

Under Alternative A, no surface-disturbing activities would be allowed within 330 feet on each side of the stream or the 100-year floodplain, whichever is greater, unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the riparian relevant and important values from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment.

Impacts from Visual Resources

Impacts would be similar to those described under Alternative N. The 8% of the potential ACEC within the Fremont Gorge WSA would be designated as VRM Class I. The 9% of the potential ACEC found to have Class A scenery outside of the WSA would be designated as VRM Class III or IV.

Impacts from Non-WSA Lands with Wilderness Characteristics

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

Impacts would be the same as those described under Alternative N.

Impacts from Travel Management

Under Alternative A, 43% of the potential ACEC would be open to cross-country vehicle use, continuing to allow for adverse impacts to relevant and important values within that portion of the area. The remaining 57% of the ACEC would be limited to designated routes, which would provide protection to the relevant and important values.

Impacts from Lands and Realty

Lands identified as available for sale under FLPMA Section 203 vary by alternative. Under Alternative A, 2,300 acres (7% of the potential ACEC) are identified as available for possible sale. Impacts to relevant and important values would be as follows:

- **Cultural and Riparian.** Impacts to these values would be assessed in a site-specific environmental analysis conducted prior to the sale of any parcel. Lands with high-value cultural or riparian values would likely not be offered for sale.
- **Scenery.** The lands identified for sale include no Class A scenery, so sales of land would have no impact on the scenic relevant and important value.
- **Mule Deer.** All lands within the potential ACEC are identified as crucial mule deer habitat. Any sale of land within the potential ACEC would result in a loss of habitat in federal ownership and would be considered in site-specific analysis prior to offering the land for sale. Actual impacts to mule deer populations and habitat would depend upon the acreage sold and how the land is used and developed after it leaves federal ownership.

No withdrawals from mineral entry are proposed under Alternative A. Therefore, there would be no impacts to relevant and important values.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Alternative A would protect the mule deer relevant and important value from being impacted by oil and gas leasing by placing seasonal restrictions on 92% of the potential ACEC. The remainder of the potential ACEC, would be closed to leasing, which would eliminate impacts to relevant and important values within those areas. It is important to note that the potential ACEC is within a portion of the lands managed by the RFO identified as having low potential for oil and gas development, so the likelihood of any impact from these activities on any relevant and important value would be small.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Under this alternative, no suitable WSRs are proposed and there would be no special management to protect the outstandingly remarkable values and free-flowing nature. This would provide no additional protection to the area's relevant and important values.

Areas of Critical Environmental Concern

Under Alternative A, no ACEC would be designated. Management according to the IMP within the 8% of the potential ACEC within the Fremont Gorge WSA would provide protection of the relevant and important values within those areas.

Proposed RMP

Impacts from Vegetation

Under the Proposed RMP, no surface-disturbing activities would be allowed within 330 feet on each side of the stream or the 100-year floodplain, whichever is greater, unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the riparian relevant and important value of the potential Fremont Gorge ACEC from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment.

Impacts from Visual Resources

Under the Proposed RMP, 17% of the potential ACEC would be designated as VRM Classes I and II, 8% of the potential ACEC within the WSA would be designated as VRM Class I, and the remaining 9% of the ACEC with Class A scenery would be designated as VRM Class II. This would provide protection for all of the Class A scenic relevant and important value of the area.

Impacts from Non-WSA Lands with Wilderness Characteristics

Portions of the Fremont Gorge (16,000 acres) non-WSA lands with wilderness characteristics lie within the 34,300-acre potential Fremont Gorge/Cockscomb ACEC. No actions to maintain wilderness characteristics within the Fremont Gorge non-WSA lands are proposed under the Proposed RMP, resulting in no additional protection for relevant and important values.

Impacts from Recreation

In the Proposed RMP, the Capitol Reef Gateway SRMA would overlap 37% (12,800 acres) of the potential ACEC east of Highway 12 and west of Capitol Reef National Park. Identifying the SRMA for primitive and semi-primitive motorized and non-motorized recreation would, in and of itself, have no

impact on the relevant and important values. However, the management of recreation uses associated with the SRMA could help protect all the relevant and important values located in those portions of the potential ACEC.

Impacts from Travel Management

Under the Proposed RMP, no areas would be designated as open to cross-country vehicle use, thus eliminating the threats to relevant and important values from cross-country activities. The potential for adverse impacts would be reduced in the 95% of the ACEC limited to designated routes and eliminated in the 5% of the area closed to OHV use.

Impacts from Lands and Realty

Lands identified as available for sale under FLPMA Section 203 vary by alternative. Under the Proposed RMP, 2,300 acres (7% of the potential ACEC) are identified as available for possible sale. Impacts to relevant and important values would be as follows:

- **Cultural and Riparian.** Impacts to these values would be assessed in a site-specific environmental analysis conducted prior to the sale of any parcel. Lands with high-value cultural or riparian values would likely not be offered for sale.
- **Scenery.** The lands identified for sale include no Class A scenery, so sales of land would have no impact on the scenic relevant and important value.
- **Mule Deer.** All lands within the potential ACEC are identified as crucial mule deer habitat. Any sale of land within the potential ACEC would result in a loss of habitat in federal ownership and would be considered in site-specific analysis prior to offering the land for sale. Actual impacts to mule deer populations and habitat would depend upon the acreage sold and how the land is used and developed after it leaves federal ownership.

No withdrawals from mineral entry are proposed under the Proposed RMP for the potential ACEC. Therefore, there would be no impacts to relevant and important values.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

The Proposed RMP would protect the mule deer relevant and important value from being impacted by oil and gas leasing by placing seasonal restrictions on 87% of the potential ACEC. The remainder of the potential ACEC would be closed to leasing (13%), which would eliminate impacts to all of the relevant and important values within those areas. It is important to note that the potential ACEC is within a portion of the lands managed by the RFO identified as having low potential for oil and gas development, so the likelihood of any impact from these activities on any relevant and important value would be small.

Impacts from Special Designations

Wilderness Study Areas

Managing the Fremont Gorge WSA (8% of the potential ACEC) to protect its wilderness characteristics under the IMP would generally benefit all relevant and important values by limiting ground-disturbing activities.

Wild and Scenic Rivers

Under the Proposed RMP, the Fremont Gorge segment of the Fremont River which is located within the potential Fremont Gorge ACEC would be recommended suitable, tentatively classified as wild, and managed to protect the river related outstandingly remarkable values of that segment. This would also

protect the relevant and important values of cultural, scenic, riparian, and plants from surface disturbing activities within this portion of the potential ACEC.

Areas of Critical Environmental Concern

Under the Proposed RMP, no ACEC would be designated. Management according to the IMP within the 8% of the potential ACEC within the Fremont Gorge WSA and management of the Fremont Gorge suitable WSR would provide protection of the relevant and important values within those areas. Existing laws, rules, and regulations, as well as other resource decisions within this alternative—such as VRM designations, protection of crucial deer habitat from cross-country OHV use, and surface disturbance—would provide protection for relevant and important values, reducing or eliminating potential impacts to the potential Fremont Gorge/Cockscomb ACEC.

Alternative C

Impacts from Vegetation

Under Alternative C, no surface-disturbing activities would be allowed within 660 feet of riparian areas unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the riparian relevant and important values from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment. Alternatives C and D provide for the greatest protection of riparian values.

Impacts from Visual Resources

Impacts would be similar to those described under the Proposed RMP, except that Alternative C would designate 22% of the potential ACEC as VRM Class I or II.

Impacts from Non-WSA Lands with Wilderness Characteristics

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

Impacts would be the same as those described under the Proposed RMP.

Impacts from Travel Management

Under Alternative C, no areas would be designated as open to cross-country vehicle use, thus eliminating the threats to relevant and important values from cross-country activities. The potential for adverse impacts would be reduced in the 32% of the ACEC limited to designated routes and would be eliminated in the 68% of the area closed to OHV use.

Impacts from Lands and Realty

Under Alternative C, no lands within the potential ACEC are identified as available for sale. Therefore, there would be no impacts to relevant and important values from proposed sales.

Withdrawing land from mineral entry would benefit all relevant and important values by protecting them from ground-disturbing activities associated with the exploration and development of locatable minerals. Alternative C proposes withdrawing 4,500 acres (14% of the potential ACEC).

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Alternative C would protect the mule deer relevant and important value from being impacted by oil and gas leasing by placing seasonal restrictions on 78% of the potential ACEC. The remainder of the potential ACEC would be open to leasing subject to major constraints (NSO) (9%) or closed to leasing (13%), which would eliminate impacts to relevant and important values within those areas. It is important to note that the potential ACEC is within a portion of the lands managed by the RFO identified as having low potential for oil and gas development, so the likelihood of any impact from these activities on any relevant and important value would be small.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Under Alternative C, the two eligible WSR segments within the potential ACEC would be recommended as suitable and managed to protect the river-related outstandingly remarkable values of those segments. This would also protect the relevant and important values within about 5% of the potential ACEC.

Areas of Critical Environmental Concern

Under Alternative C, Fremont Gorge/Cockscomb ACEC would be designated on 34,300 acres of public land in Wayne County. In addition to management direction for other resource programs associated with Alternative C (described above), designating the ACEC would allow no uses that would cause irreparable damage to relevant and important values.

Alternative D

Impacts from Vegetation

Impacts would be the same as those described under Alternative C.

Impacts from Visual Resources

Alternative D would provide the most protection of scenic values by designating 59% of the potential ACEC as VRM Class I or II.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under Alternative D, protecting the non-WSA lands with wilderness characteristics within the Fremont Gorge/Cockscomb ACEC would provide protection for relevant and important values on 16,000 acres. Specifics are disclosed in the visual resource management, travel, lands and realty, and minerals discussions in this section. However, some of the prescriptions associated with protecting wilderness characteristics could limit opportunities for managing vegetation for the mule deer relevant and important value.

Impacts from Recreation

Impacts would be the same as those described under the Proposed RMP.

Impacts from Travel Management

Under Alternative D, no areas would be designated as open to cross-country vehicle use, thus eliminating the threats to relevant and important values from cross-country activities. The potential for adverse

impacts would be reduced in the 41% of the ACEC limited to designated routes and would be eliminated in the 59% of the area closed to OHV use.

Impacts from Lands and Realty

Under Alternative C, no lands within the potential ACEC are identified as available for sale. Therefore, there would be no impacts to relevant and important values from proposed sales.

Withdrawing land from mineral entry would benefit all relevant and important values by protecting them from ground-disturbing activities associated with the exploration and development of locatable minerals. Alternative D proposes withdrawing 17,300 acres (50% of the potential ACEC).

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

This alternative would protect the mule deer relevant and important value from being impacted by oil and gas on 40% of the potential ACEC by opening it to leasing subject to moderate constraints (timing limitation, CSU). Alternative D would best protect scenic, cultural, and riparian relevant and important values from ground disturbance caused by oil and gas exploration and development within 60% of the potential ACEC by closing it to leasing or opening it to leasing subject to major constraints (NSO).

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Impacts would be the same as those described under Alternative C.

Areas of Critical Environmental Concern

Impacts would be the same as those described under Alternative C.

Henry Mountains Potential ACEC

The Henry Mountains Potential ACEC is located in the Henry Mountains south of Hanksville and totals 288,200 acres. Forty-five percent of the potential ACEC is within the Mount Hillers, Mount Pennell, and Bull Mountain WSAs, and the southern portion of the Mount Ellen—Blue Hills WSA. Relevant and important values are scenic, wildlife (bison and mule deer), SSS (Townsend's big-eared bat, ferruginous hawk, burrowing owl, hole-in-the-rock prairie clover, Dana's milkvetch, Barneby milkvetch), and ecological values (riparian areas and relict vegetation).

The portion of the potential ACEC that is within WSAs would be managed under the IMP, which would protect the relevant and important values from surface-disturbing activities. Impacts to the relevant and important values of this ACEC could occur from the following resource management programs:

- Vegetation and Fire and Fuels Management
- Visual Resources
- Special Status Species
- Fish and Wildlife
- Non-WSA Lands with Wilderness Characteristics
- Forestry and Woodland Products

- Livestock Grazing
- Recreation
- Travel Management
- Lands and Realty
- Minerals and Energy
- Special Designations.

Other programs were determined to have little or no impact on the relevant and important values of this potential ACEC.

Alternative N: No Action

Impacts from Vegetation and Fire and Fuels Management

Managing vegetation and fire and fuels could enhance bison and mule deer habitat and riparian values, and could adversely impact scenic, cultural, and SSS values. Under Alternative N, managing vegetation with a full range of tools—mechanical, biological, manual, fire, and chemical—would have beneficial impacts on mule deer and bison habitat but could have adverse impacts on scenic values if treatments occurred in areas having Class A scenery.

Vegetation and fire and fuels treatments could have indirect impacts on cultural resources from increased erosion and displacement and destruction of surface artifacts and, in some cases, destruction of surface and buried structures and features. Overall impacts from vegetation management would result in direct and indirect impacts to cultural resources, which could be partially mitigated during compliance with NEPA and Section 106 of NHPA. Projects would be redesigned to avoid historic properties or those eligible for or listed on the NRHP, thus mitigating some of the direct and indirect impacts.

Vegetation treatment methods include mechanical, prescribed fire, and chemical treatments. Surface-disturbing activities, such as the use of heavy equipment, cause crushing and mortality of individual plants and alter habitat. The use of herbicides or pesticides in occupied habitat could render the habitat unsuitable by some species. Chemical weed controls could also affect potential pollinators of special status plant species by eliminating their habitat.

Removing vegetation with heavy equipment could temporarily reduce potential breeding and nesting habitats. Human disturbance and noise associated with the use of heavy equipment could also temporarily displace special status bird species from foraging and nesting habitats. For example, the Southwestern willow flycatcher and the yellow-billed cuckoo have been known to nest in tamarisk and Russian olive. Vegetation treatments to remove these invasive plant species could result in habitat loss and disrupt nesting and foraging behavior. Overall impacts from vegetation management to SSS are discussed in more detail in Section 4.3.8 of this document. Analysis of impacts to SSS would occur during project-specific NEPA and adjustments would be made in the project if impacts to SSS were identified. Any vegetation or fuels projects would be required to adhere to the Endangered Species Act, and, for portions of the potential ACEC within WSAs, the IMP. In the long term, special status animal species would benefit from most vegetation treatments through an increase in vegetation productivity, which would provide additional forage, cover, and prey base.

Under all alternatives, no surface-disturbing activities would be allowed within identified distances (which vary by alternative) from riparian areas unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. Under Alternative N, the protection zone for riparian areas would be 500 feet. This would protect the riparian relevant and important values from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment.

Impacts from Visual Resources

Visual resource management classes within the potential ACEC, by alternative, are shown in Table 4-71. The higher VRM classes (I and II) would better protect the scenic values and, by limiting surface-disturbing activities, also benefit other values. Under Alternative N, all Class A scenery would be managed as VRM Classes I and II, providing protection to the scenic relevant and important values. Conversely, the lower VRM classes (III and IV) would permit greater flexibility in vegetation management, a benefit to the mule deer and bison value. The remaining 56% of the potential ACEC would be designated as VRM Class III or IV, which would least restrict vegetation management activities.

Table 4-71. VRM Class Designations within Henry Mountains Potential ACEC

		Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Class I	**Acres**	0	130,000	130,000	130,000	222,500
	% ACEC	0%	45%	45%	45%	78%
Class II	**Acres**	127,600	0	43,900	54,200	23,200
	% ACEC	44%	0%	15%	19%	8%
Class III	**Acres**	43,300	34,700	0	24,600	15,100
	% ACEC	15%	12%	0%	8%	5%
Class IV	**Acres**	117,300	123,500	114,300	79,400	27,400
	% ACEC	41%	43%	40%	28%	9%

Impacts from Special Status Species

Under all alternatives, management actions such as prohibiting the destruction, adverse modification, or fragmentation of listed species habitat; maintaining the integrity of SSS habitat; and habitat improvements would benefit SSS.

Impacts from Fish and Wildlife

Management actions for the benefit of bison and mule deer would benefit those relevant and important values. These management prescriptions and seasonal and spatial restrictions on activities within the potential ACEC vary by alternative. Alternative N would provide no special management for the Henry Mountains bison or mule deer. Current seasonal closures to OHV use on Swap Mesa and Cave Flat and restrictions of oil and gas activities in crucial bison and mule deer habitat during sensitive seasons would benefit the relevant and important values of bison and mule deer. These seasonal restrictions would protect fewer acres and for a shorter time frame than the Proposed RMP and Alternatives C and D.

Impacts from Non-WSA Lands with Wilderness Characteristics

All of Mount Hillers (1,800 acres) and portions of the Bull Mountain (2,800 acres), Mount Ellen—Blue Hills (17,800 acres), Mount Pennell (45,700 acres), and Ragged Mountain (24,400 acres) non-WSA lands with wilderness characteristics lie within the 288,200-acre potential Henry Mountains ACEC. No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under Alternative N, resulting in no additional protection for relevant and important values.

Impacts from Forestry and Woodland Products

Allowing for the harvest of forest and woodland products in the Henry Mountains outside the WSAs could have an adverse impact on Class A scenery due to potential changes in the landscape character. These potential impacts would be greater with commercial harvest of timber and woodland products than with smaller-scale, non-commercial harvesting of woodland products for personal use. There could be short-term impacts to riparian and other relevant and important values from surface disturbances associated with harvesting activities. Effects would be determined in site-specific environmental analysis, and mitigating measures would likely be developed. Proposed decisions for areas open to forest and woodland products harvest vary by alternative. Under Alternative N, no commercial timber harvesting would be allowed within the Henry Mountains. Non-commercial use of woodlands products outside WSAs by permit would continue. Demand for these products has been low and mostly occurs within seeding areas in which continued harvest of woodland products is beneficial to maintenance of these areas for wildlife. Potential impacts to the relevant and important values would be low.

Impacts from Livestock Grazing

Under all alternatives, implementing the *Fundamentals of Rangeland Health* and *Standards and Guidelines for Grazing Administration* and maintaining or improving rangeland productivity would be beneficial to mule deer, bison, and riparian relevant and important values.

Impacts from Recreation

The establishment of SRMAs would vary by alternative. No SRMA is proposed in Alternative N, so there would be no impact to relevant and important values.

Impacts from Travel Management

OHV area designations, by alternative, are shown in Table 4-72. Cross-country OHV use could adversely impact the scenic, riparian, and special status plant species values if OHVs traveled where these values were present. Plants could be crushed, damaged, or destroyed; cultural resources could be damaged or destroyed; and new trails could be established in scenic areas. OHV use could also disturb bison and mule deer. Under Alternative N, 54% of the potential ACEC would continue to be open to cross-country motorized travel, adversely impacting scenic, wildlife (bison and mule deer), SSS, and ecological values if the OHVs traveled in the areas in which these values are present. Plants could be crushed and damaged or destroyed, and new trails could be established in areas containing Class A scenery. In closed areas (12%), relevant and important values would benefit because OHV use and associated surface disturbances and human-caused disruptions would be essentially eliminated. Seasonal OHV closures on Cave Flat and Swap Mesa would continue to benefit bison by reducing human disturbances during the critical winter period.

Table 4-72. OHV Area Designations within Henry Mountains Potential ACEC

		Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Open	Acres	155,800	0	0	0	0
	% Area	54%	0%	0%	0%	0%
Limited	Acres	98,000	288,200	288,200	81,000	57,800
	% Area	34%	100%	100%	28%	20%
Closed	Acres	34,400	0	0	207,200	230,400
	% Area	12%	0%	0%	72%	80%

Impacts from Lands and Realty

Withdrawing land from mineral entry would benefit all relevant and important values by protecting them from ground-disturbing activities associated with the exploration and development of locatable minerals. No withdrawals from mineral entry are proposed under Alternative N. Therefore, there would be no impacts to relevant and important values.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Lands open to oil and gas leasing vary by alternative, as shown in Table 4-73. Under all alternatives, there would be no impacts to relevant and important values within the WSAs, which are closed to oil and gas leasing by law. WSAs represent 45% of the potential ACEC. Under Alternative N, 37% of the potential ACEC would be open to oil and gas leasing subject to the standard terms and conditions, and 18% would be open to leasing subject to moderate constraints (timing limitation, CSU), where exploration and development activities would be restricted in portions of the mule deer and bison range during the winter and spring. Among the alternatives, Alternative N would have the greatest potential to impact all relevant and important values. In addition, the potential ACEC is in a portion of the lands managed by the RFO identified as having low development potential for oil and gas leasing. Few, if any, wells are expected to be drilled in this area in the next 15 to 20 years.

Table 4-73. Leasing Stipulations within Henry Mountains Potential ACEC

		Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Standard Lease Terms	Acres	105,700	200	0	0	0
	% Area	37%	<1%	0%	0%	0%
Controlled Surface Use or Timing Stipulations (Seasonal)	Acres	51,700	158,000	142,100	106,200	43,500
	% Area	18%	55%	49%	37%	15%
No Surface Occupancy	Acres	800	0	16,100	17,200	5,200
	% Area	<1%	0%	6%	6%	2%
Closed	Acres	130,000	130,000	130,000	164,800	239,500
	% Area	45%	45%	45%	57%	83%

Leasable Minerals—Coal

Development of coal resources, particularly surface mining, could adversely impact all relevant and important values. In the Henry Mountains coal field, some of the 8,134 acres of coal resources acceptable for leasing by underground mining methods and 3,013 acres acceptable for surface mining methods are located within the ACEC. Under this alternative, the potential ACEC would be available for consideration for leasing for surface coal mining, which could cause irreparable harm to the relevant and important values in the area where surface mining occurred. Mitigation of such impacts would be addressed during site-specific NEPA prior to development. The 45% of the ACEC within the WSAs would be managed pursuant to the IMP, which would provide protection from these activities.

Locatable Minerals

Exploration and development of locatable minerals could impact relevant and important values sensitive to surface disturbance and harassment, including scenic values. The development of gold and copper (if found in economic quantities in the Henry Mountains) is possible, though probably on a small scale. Development is most likely in the Bromide Basin/Crescent Creek area. There is also potential for uranium development in the southern half of the Henry Mountains. Impacts to relevant and important values through direct ground disturbance and harassment of wildlife would be greatest under Alternatives N and A.

Salable Minerals

Under Alternative N, the effects of mineral material sales on relevant and important values would be determined on a case-by-case basis. Mitigation measures, if necessary to protect relevant and important values, would be developed during site-specific NEPA analysis.

Impacts from Special Designations

Wilderness Study Areas

The potential ACEC encompasses 130,000 acres of WSAs, including all of the Mount Hillers, Mount Pennell, and Bull Mountain WSAs and the southern portion of the Mount Ellen—Blue Hills WSA. Within the WSAs, which represent 45% of the potential ACEC, relevant and important values would be protected from ground-disturbing activities by management under the IMP, which requires BLM to protect these areas' suitability for wilderness.

Wild and Scenic Rivers

The only eligible WSR within the potential ACEC is a portion of Maidenwater Creek. Due to the small portion of the potential ACEC encompassed by Maidenwater Creek, neither recommending nor not recommending it as a suitable WSR would have any perceptible impact on any relevant and important values.

Areas of Critical Environmental Concern

Under Alternative N, no ACEC would be designated. Management according to the IMP within the 45% of the potential ACEC within the WSAs would provide protection of the relevant and important values within that portion of the potential ACEC.

Alternative A

Impacts from Vegetation and Fire and Fuels Management

Impacts would be similar to those described under Alternative N for vegetation and fire and fuels treatments. Under Alternative A, no surface-disturbing activities would be allowed within 330 feet on each side of the stream or the 100-year floodplain, whichever is greater, unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the riparian relevant and important values from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment.

Impacts from Visual Resources

Impacts would be similar to those described under Alternative N. Alternative A would designate 45% of the potential ACEC as VRM Class I, providing protection to the scenic values. The remainder of the area would be designated as VRM Classes III and IV, allowing greater flexibility in vegetation management, a benefit to the mule deer and bison relevant and important value.

Impacts from Special Status Species

Under all alternatives, management actions such as prohibiting the destruction, adverse modification, or fragmentation of listed species habitat; maintaining the integrity of SSS habitat; and habitat improvements would benefit SSS. In Alternative A, additional strategies (such as utilizing seasonal and spatial buffers for surface-disturbing activities and complying with raptor protection guidelines for powerline construction) would be employed to protect raptors and their habitat. These actions would minimize or eliminate impacts to the SSS relevant and important values.

Impacts from Fish and Wildlife

Management actions for the benefit of bison and mule deer would benefit those relevant and important values. Alternative A would implement the fewest specific management prescriptions and seasonal or spatial restrictions on human presence or surface-disturbing activities, which could result in greater impacts to mule deer and bison during critical periods. There would be no special management for Henry Mountains bison or mule deer. Seasonal or spatial restrictions on surface-disturbing activity could be added as mitigation but would not be required. However, limiting OHV use to designated routes in crucial bison habitat and allowing the use of prescriptive grazing to favor forage production for big game crucial winter range would benefit habitats and the relevant and important values of bison and mule deer.

Impacts from Non-WSA Lands with Wilderness Characteristics

Impacts would be the same as those described under Alternative N.

Impacts from Forestry and Woodland Products

Allowing for the harvest of forest and woodland products in the Henry Mountains outside the WSAs could have an adverse impact on scenery (Class A) due to potential changes in the landscape character. These potential impacts would be greater with the commercial harvest of timber and woodland products than with smaller-scale, non-commercial harvesting of woodland products for personal use. There could be short-term impacts to riparian and other relevant and important values from surface disturbances associated with harvesting activities. Effects would be determined in site-specific environmental analysis and mitigating measures developed if impacts were anticipated. Under Alternative A, commercial and non-commercial harvesting of forest and woodland products would be allowed (outside WSAs) where feasible, sustainable, and compatible with restoring, maintaining, or improving forest health. This could indirectly benefit wildlife species by improving habitat conditions. If demands for products increase, potential impacts to scenic values would be greatest under this alternative.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

Impacts would be the same as those described under Alternative N.

Impacts from Travel Management

Under Alternative A, OHVs would be limited to designated routes within the entire potential ACEC. No areas would be open to cross-country OHV use, which would reduce impacts on relevant and important values compared with Alternative N.

Impacts from Lands and Realty

Impacts would be the same as those described under Alternative N.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Under Alternative A, 55% of the potential ACEC would be open to oil and gas leasing subject to moderate constraints (timing limitation, CSU) where exploration and development activities would be restricted in the mule deer and bison range during the winter and spring. The 45% of the potential ACEC within the WSAs would be closed to oil and gas leasing. Compared with Alternative N, Alternative A would reduce impacts to bison and mule deer by placing more land under seasonal restrictions. In addition, the potential ACEC is in a portion of the lands managed by the RFO identified as having low development potential for oil and gas leasing. Few, if any, wells are expected to be drilled in this area in the next 15 to 20 years.

Leasable Minerals—Coal

Impacts would be the same as those described under Alternative N.

Locatable Minerals

Impacts would be the same as those described under Alternative N.

Salable Minerals

Impacts would be the same as those described under Alternative N.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Impacts would be the same as those described under Alternative N.

Areas of Critical Environmental Concern

Under Alternative A, no ACEC would be designated. Management according to the IMP within the 45% of the potential ACEC within the WSAs would provide protection of the relevant and important values within that portion of the potential ACEC.

Proposed RMP

Impacts from Vegetation and Fire and Fuels Management

Impacts associated with vegetation and fire and fuels management would be similar to those described under Alternative N. Under the Proposed RMP, a full-range of tools would be permitted and more of the potential ACEC would be designated as VRM Class II, providing beneficial impacts to wildlife relevant and important value while protecting the scenic relevant and important value. Impacts associated with riparian protection zones would be the same as Alternative A. Under the Proposed RMP, no surface-disturbing activities would be allowed within 330 feet on each side of the stream or the 100-year floodplain, whichever is greater, unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the riparian relevant and important values from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment.

Impacts from Visual Resources

The Proposed RMP would designate 45% of the potential ACEC as VRM Class I and 15% as VRM Class II, providing protection to the scenic relevant and important values. The remainder of the area would be designated as VRM Classes III and IV, allowing greater flexibility in vegetation management, a benefit to the mule deer and bison value.

Impacts from Special Status Species

Under the Proposed RMP, management actions such as prohibiting the destruction, adverse modification, or fragmentation of listed species habitat; maintaining the integrity of SSS habitat; and habitat improvements would benefit SSS. Additional strategies (such as utilizing seasonal and spatial buffers for surface-disturbing activities and complying with raptor protection guidelines for powerline construction) would be employed to protect raptors and their habitat. These actions would minimize or eliminate impacts to the SSS relevant and important values.

Impacts from Fish and Wildlife

Management actions for the benefit of bison and mule deer would benefit the wildlife relevant and important values. The Proposed RMP would provide more specific management prescriptions and seasonal or spatial restrictions on human presence or surface-disturbing activities than Alternatives N and A, but less than Alternatives C and D. A habitat management plan for bison, mule deer, and other big game species within the Henry Mountains area would be developed and prescriptive grazing would be used to favor forage production for big game high-priority and crucial winter range. OHV use would be limited to designated routes in mule deer and bison crucial habitat, and seasonal restrictions of surface-disturbing activities would be required in crucial bison and mule deer habitats. These management actions would provide adequate protection for the wildlife relevant and important value of the potential Henry Mountains ACEC.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under the Proposed RMP, the Mount Ellen—Blue Hills (3,900 acres), Mount Pennell (4,700 acres), and Ragged Mountain (7,900 acres) non-WSA lands with wilderness characteristics would be managed for wilderness characteristics. Management prescriptions would protect scenic values, reduce or eliminate surface disturbance, and retain public lands in federal ownership. Combined, approximately 15,890 acres (6% of the potential Henry Mountains ACEC) would be overlapped by non-WSA areas managed to maintain their wilderness characteristics, providing indirect protection for relevant and important values within those areas.

Impacts from Forestry and Woodland Products

Impacts would be similar to those described under Alternative A, except that the potential for impacts to the scenic values from woodland products harvest would be reduced. All Class A scenery (44% of the potential Henry Mountain ACEC) would be managed as VRM Classes I (29% of the potential Henry Mountain ACEC) and VRM Class II (15% of the potential Henry Mountain ACEC), providing protection for that relevant and important value.

Impacts from Livestock Grazing

Under all alternatives, including the Proposed RMP, implementing the *Fundamentals of Rangeland Health* and *Standards and Guidelines for Grazing Administration* and maintaining or improving rangeland productivity would be beneficial to the wildlife (mule deer, bison) and riparian relevant and important values.

Impacts from Recreation

Under the Proposed RMP, the Henry Mountains SRMA (532,600 acres) would encompass all of the Henry Mountains Potential ACEC. Management emphasis on primitive and semi-primitive motorized and non-motorized recreation would complement the relevant and important values by focusing recreational use and limiting development and surface-disturbing activities.

Impacts from Travel Management

Impacts would be the same as those described under Alternative A. Under the Proposed RMP, OHVs would be limited to designated routes within the entire potential ACEC. No areas would be open to cross-country OHV use, which would reduce impacts on all relevant and important values within the potential ACEC, compared with Alternative N.

Impacts from Lands and Realty

Withdrawing land from mineral entry would benefit all relevant and important values by protecting them from ground-disturbing activities associated with the exploration and development of locatable minerals. No withdrawals from mineral entry are proposed under within the potential Henry Mountains ACEC in the Proposed RMP. Therefore, there would be no beneficial impacts to relevant and important values.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Under the Proposed RMP, 49% of the potential ACEC would be open to oil and gas leasing subject to moderate constraints (timing limitation, CSU), 6% open to leasing subject to major constraints (NSO), and the 45% within the WSAs would be closed to leasing. No areas would be available for oil and gas development under standard stipulations. These oil and gas leasing restriction in the Proposed RMP would reduce or eliminate potential impacts to all relevant and important values within the potential ACEC. In addition, the potential ACEC is in a portion of the lands managed by the RFO identified as having low development potential for oil and gas leasing. Few, if any, wells are expected to be drilled in this area in the next 15 to 20 years.

Leasable Minerals—Coal

Development of coal resources, particularly surface mining, could adversely impact all relevant and important values. In the Henry Mountains coal field, some of the 8,134 acres of coal resources acceptable for leasing by underground mining methods and 3,013 acres acceptable for surface mining methods are located within the potential ACEC. Under the Proposed RMP, the potential ACEC would be available for consideration for leasing for surface coal mining, which could cause irreparable harm to the relevant and important values in the area where surface mining occurred. Mitigation of such impacts would be addressed during site-specific NEPA prior to development. The 45% of the ACEC within the WSAs would be managed pursuant to the IMP, which would provide protection to all the relevant and important values from these activities within those areas.

Locatable Minerals

Exploration and development of locatable minerals could impact relevant and important values sensitive to surface disturbance and harassment, including scenic values. The development of gold and copper (if found in economic quantities in the Henry Mountains) is possible, though probably on a small scale. Development is most likely in the Bromide Basin/Crescent Creek area. There is also potential for uranium development in the southern half of the Henry Mountains. Locatable mineral exploration and development would be allowed under the General Mining Law. FLPMA requires BLM to regulate mining activities to prevent undue and unnecessary environmental degradation to resources. Mitigation such as minimizing visual impacts and avoiding sensitive seasons or areas for wildlife and SSS would be

addressed in site-specific analysis as proposals are reviewed. These mitigation measures would reduce, but would not eliminate, impacts to relevant and important values.

Salable Minerals

Under the Proposed RMP, no material sales would be allowed in Class A scenery areas, resulting in no surface disturbance and no impact to the relevant and important scenic value. The effects of mineral material sales on relevant and important values outside the Class A scenery would be similar to those described under Alternative N. Material sales would be analyzed on a case-by-case basis and mitigation measures, if necessary to protect relevant and important values, would be developed during site-specific NEPA analysis.

Impacts from Special Designations

Wilderness Study Areas

The potential ACEC encompasses 130,000 acres of WSAs, including all of the Mount Hillers, Mount Pennell, and Bull Mountain WSAs and the southern portion of the Mount Ellen—Blue Hills WSA. Within the WSAs, which represent 45% of the potential ACEC, all relevant and important values would be protected from ground-disturbing activities by management under the IMP, which requires BLM to protect these areas' suitability for wilderness. This management would provide indirect protection for all relevant and important values of this portion of the potential Henry Mountains ACEC.

Wild and Scenic Rivers

The only eligible WSR within the potential ACEC is a portion of Maidenwater Creek. Due to the small portion of the potential ACEC encompassed by Maidenwater Creek, neither recommending nor not recommending it as a suitable WSR would have any perceptible impact on any relevant and important values.

Areas of Critical Environmental Concern

Under the Proposed RMP, no ACEC would be designated. Management according to the IMP within the 45% of the potential ACEC within the WSAs would provide protection of the relevant and important values within those areas. Other resource decisions under this alternative such as VRM Classes I and II, limiting OHV use to designated routes, and seasonal/spatial restrictions would provide adequate protection for the relevant and important values of the potential ACEC.

Alternative C

Impacts from Vegetation and Fire and Fuels Management

Under Alternative C, utilizing only natural processes to treat vegetation could limit the success of treatments, adversely impacting bison and mule deer relevant and important values.

Under Alternative C, no surface-disturbing activities would be allowed within 660 feet from riparian areas unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the riparian relevant and important values from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment.

Impacts from Visual Resources

Impacts would be similar to those described under the Proposed RMP, except that Alternative C would designate 64% of the potential ACEC as VRM Class I or II and the remaining as VRM Class III or IV.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative A.

Impacts from Fish and Wildlife

Alternative C would implement additional management prescriptions in support of the potential ACEC and greater seasonal and spatial restrictions on human presence or surface-disturbing activities, which could result in benefits to the relevant and important values of mule deer and bison. Under Alternative C, prescriptive grazing would be used to favor forage production for big game ranges. Manipulation of habitat and range improvements would be allowed to benefit wildlife. An HMP would be developed for bison and mule deer within the ACEC. OHV use in mule deer crucial winter range and crucial bison habitat would be limited to designated routes or closed. Seasonal restrictions would apply to surface-disturbing activities in crucial bison habitat and crucial and high-value mule deer habitat.

Impacts from Non-WSA Lands with Wilderness Characteristics

Impacts would be the same as those described under Alternative N.

Impacts from Forestry and Woodland Products

Impacts would be similar to those described under Alternative N. No commercial timber harvest would be allowed. Commercial and non-commercial use of forest and woodland products would continue outside WSAs, where feasible, sustainable, and compatible with restoring, maintaining, or improving forest health.

Impacts from Livestock Grazing

Impacts would be similar to Alternative N.

Impacts from Recreation

Impacts would be the same as those described under the Proposed RMP.

Impacts from Travel Management

Under Alternative C, OHVs would be limited to designated routes within 28% of the potential ACEC. Seventy-two percent of the area would be closed to OHV use, which would reduce impacts on relevant and important values compared to Alternatives N, and A and the Proposed RMP.

Impacts from Lands and Realty

Withdrawing land from mineral entry would benefit all relevant and important values by protecting them from ground-disturbing activities associated with the exploration and development of locatable minerals. A withdrawal of 53,400 acres (19% of the potential ACEC) to protect Class A scenery outside the WSAs is proposed in Alternative C as part of the ACEC designation, which would provide additional protection of the relevant and important values.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Under Alternative C, 37% of the potential ACEC would be open to oil and gas leasing subject to moderate constraints (timing limitation, CSU). The remainder of the potential ACEC would either be open to leasing subject to major constraints (NSO) (6%) or closed to leasing (57%; 12% in addition to WSAs), reducing or eliminating impacts to relevant and important values. In addition, the potential ACEC is in a portion of the lands managed by the RFO identified as having low development potential for oil and gas leasing. Few, if any, wells are expected to be drilled in this area in the next 15 to 20 years.

Leasable Minerals—Coal

Under Alternative C, the Henry Mountains coal field, 8,134 acres of coal resources acceptable for leasing by underground mining methods, and 3,013 acres acceptable for surface mining methods would be closed to leasing due to the management of the Henry Mountains and Badlands ACECs. Closing these public lands to coal leasing would preclude exploration and development of coal resources within those portions of the ACECs, thus eliminating the potential for impacts to relevant and important values.

Locatable Minerals

Impacts would be less than those described under Alternative N. Under Alternative C, 19% of the potential ACEC is proposed for withdrawal from mineral entry, which would provide additional protection for relevant and important values within a larger portion of the potential ACEC.

Salable Minerals

Impacts would be the same as those described under the Proposed RMP.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Impacts would be the same as those described under Alternative N.

Areas of Critical Environmental Concern

Under Alternative C, the Henry Mountains ACEC would be designated on 288,200 acres of public land to protect and provide special management for the relevant and important values. In addition to management direction associated with Alternative C described above, designating the ACEC would allow no uses that would cause irreparable damage to relevant and important values.

Alternative D

Impacts from Vegetation and Fire and Fuels Management

Impacts would be the same as those described under Alternative C.

Impacts from Visual Resources

Alternative D would best protect the scenic values by designating 86% of the potential ACEC as VRM Class I or II. However, designating only 14% of the potential ACEC as VRM Classes III and IV would restrict vegetation management activities, resulting in fewer benefits to the mule deer and bison relevant and important values.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative A.

Impacts from Fish and Wildlife

Impacts would be similar to those described under Alternative C. Manipulation of habitat and range improvement outside of WSAs and non-WSA lands with wilderness characteristics would be allowed to benefit wildlife. This would restrict vegetation manipulations and result in reduced benefits to wildlife. OHV use in mule deer crucial winter range and crucial bison habitat would be limited to designated routes or closed, with the largest acres closed to OHV use in Alternative D. Alternative D would provide

the greatest protection from surface disturbances and the greatest restriction of vegetation enhancement to benefit the mule deer and bison values.

Impacts from Non-WSA Lands with Wilderness Characteristics

All of the Mount Hillers (1,800 acres) and portions of the Bull Mountain (2,800 acres), Mount Ellen—Blue Hills (17,800 acres), Mount Pennell (45,700 acres), and Ragged Mountain (24,400 acres) non-WSA lands with wilderness characteristics lie within the 288,200-acre potential Henry Mountains ACEC. Under Alternative D, protecting the non-WSA lands with wilderness characteristics within the Henry Mountains ACEC would provide protection for relevant and important values on 92,500 acres. Specifics are disclosed in the vegetation, visual resource management, travel, lands and realty (withdrawals), and minerals discussions in this section.

Impacts from Forestry and Woodland Products

Under Alternative D, prohibiting commercial and non-commercial use of forest and woodland products (including timber harvesting in the Henry Mountains) would result in no impacts to relevant and important values caused by this activity, but would preclude any wildlife habitat improvements that could result from harvest.

Impacts from Livestock Grazing

Impacts would be similar to Alternative N.

Impacts from Recreation

Impacts would be the same as those described under the Proposed RMP.

Impacts from Travel Management

Under Alternative D, OHVs would be limited to designated routes within 20% of the potential ACEC. Eighty percent of the area would be closed to OHV use. Among the alternatives, Alternative D would best protect relevant and important values from ground disturbance and harassment caused by OHVs.

Impacts from Lands and Realty

Impacts would be similar to those described under Alternative C, except that additional acres are proposed for withdrawal (115,400 acres, 40% of the potential ACEC) in Alternative D to protect the non-WSA lands with wilderness characteristics.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Under Alternative D, 83% of the potential ACEC would be closed to oil and gas leasing. Among the alternatives, Alternative D would best protect the relevant and important values from surface disturbance and harassment caused by oil and gas exploration and development.

Leasable Minerals—Coal

Impacts would be the same as those described under Alternative C.

Locatable Minerals

The potential for impacts would be the least under Alternative D. Under this alternative, 40% of the potential ACEC is proposed for withdrawal from mineral entry, which would provide additional protection for relevant and important values.

Salable Minerals

Impacts would be the same as those described under the Proposed RMP.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Impacts would be the same as those described under Alternative N.

Areas of Critical Environmental Concern

Impacts would be the same as those described under Alternative C.

Horseshoe Canyon Potential ACEC

The Horseshoe Canyon Potential ACEC includes Horseshoe Canyon, a tributary to the Green River, and totals 40,900 acres. It is located in northeastern Wayne County. It includes portions of the Horseshoe Canyon North and Horseshoe Canyon South WSAs. Relevant and important values are scenic, cultural (Cowboy Cave), SSS (Townsend's big-eared bat), and riparian. Ninety-two percent of the potential ACEC is within WSAs, where management under the IMP would protect all relevant and important values from surface-disturbing activities. Impacts to the relevant and important values of this ACEC could occur from the following resource management programs:

- Vegetation (Riparian)
- Visual Resources
- Special Status Species
- Non-WSA Lands with Wilderness Characteristics
- Recreation
- Travel Management
- Lands and Realty
- Minerals and Energy
- Special Designations.

Other programs were determined to have little or no impact on the relevant and important values of this potential ACEC.

Alternative N: No Action

Impacts from Vegetation

Under all alternatives, no surface-disturbing activities would be allowed within identified distances (which vary by alternative) from riparian areas unless it could be shown that there are no practical alternatives, all long-term impacts can be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the riparian relevant and important values from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment. Under Alternative N, no surface-disturbing activities would be allowed within 500 feet from riparian areas, providing protection of the riparian relevant and important values.

Impacts from Visual Resources

Visual resource management classes within the potential ACEC, by alternative, are shown in Table 4-74. The higher VRM classes (I and II) would better protect the scenic values and, by limiting surface-disturbing activities, also benefit other relevant and important values. Under Alternative N, 99% of the potential ACEC would be managed for VRM Classes I and II, providing adequate protection of the scenic relevant and important value.

Table 4-74. VRM Class Designations within the Horseshoe Canyon Potential ACEC

		Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Class I	Acres	0	37,800	37,800	37,800	40,800
	% ACEC	0%	92%	92%	92%	100%
Class II	Acres	40,400	0	2,900	2,900	100
	% ACEC	99%	0%	7%	7%	<1%
Class III	Acres	500	3,100	200	200	0
	% ACEC	1%	8%	<1%	<1%	0%
Class IV	Acres	0	0	0	0	0
	% ACEC	0%	0%	0%	0%	0%

Impacts from Special Status Species

Under all alternatives, management actions such as prohibiting the destruction, adverse modification, or fragmentation of listed species habitat; maintaining the integrity of SSS habitat; and habitat improvements would benefit SSS.

Impacts from Non-WSA Lands with Wilderness Characteristics

A portion of the Horseshoe Canyon South (2,900 acres) and Labyrinth Canyon (1 acre) non-WSA lands with wilderness characteristics lie within the 40,900-acre (RFO portion only) potential Horseshoe Canyon ACEC. No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under Alternative N, resulting in no additional protection for relevant and important values.

Impacts from Recreation

No SRMA is proposed in Alternative N, so there would be no impact to relevant and important values.

Impacts from Travel Management

OHV use would not threaten relevant and important values under any of the alternatives for several reasons. First, no OHV open areas are proposed under any of the alternatives, precluding impacts from cross-country OHV use. Second, only 7 miles of open motorized routes were inventoried, a nominal amount in such a large area. These routes would remain open under Alternatives N, and A and the Proposed RMP. Third, much of the terrain within the potential ACEC is too rugged to be accessible to vehicles in any case. OHV area designations by alternative are shown in Table 4-75.

Table 4-75. OHV Area Designations within the Horseshoe Canyon Potential ACEC

		Alternative N (No Action)	Alternative A	Proposed RMP	Alternatives C and D
Open	Acres	0	0	0	0
	% area	0%	0%	0%	0%
Limited	Acres	40,900	40,900	32,800	100
	% area	100%	100%	80%	<1%
Closed	Acres	0	0	8,100	40,800
	% area	0%	0%	20%	>99%

Impacts from Lands and Realty

Under Alternative N, proposed decisions for land tenure adjustments could maintain, increase, or decrease the land in federal ownership, having a beneficial or adverse impact on relevant and important values that would be determined in site-specific environmental analysis.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Under Alternative N, 92% of the potential ACEC (the portion within the WSA) would be closed to oil and gas leasing, precluding any impacts from oil and gas exploration or development activities. Oil and gas stipulations in the area outside the WSA vary by alternative, as shown in Table 4-76 below. Alternative N would allow oil and gas exploration and development with standard lease terms and conditions within 8% of the potential ACEC, which could impact relevant and important values.

Table 4-76. Leasing Stipulations within the Horseshoe Canyon Potential ACEC

		Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Standard Lease Terms	Acres	3,100	0	0	0	0
	% Area	8%	0%	0%	0%	0%
Controlled Surface Use or Timing Stipulations	Acres	0	3,100	200	0	0
	% Area	0%	8%	1%	0%	0%
No Surface Occupancy	Acres	0	0	2,900	3,100	100
	% Area	0%	0%	7%	8%	Negligible
Closed	Acres	37,800	37,800	37,800	37,800	40,800
	% Area	92%	92%	92%	92%	100%

Locatable Minerals

Under all alternatives, only 8% of the potential ACEC could be impacted by mineral exploration and development (because the remainder is within the WSA). Due to the remoteness and low mineral

potential within the area, it would be unlikely that mining activity would impact the relevant and important values.

Impacts from Special Designations

Wilderness Study Areas

The potential ACEC encompasses 37,800 acres of the Horseshoe Canyon WSA. Within the WSA, which represents 92% of the potential ACEC, relevant and important values would be protected from ground-disturbing activities by management under the IMP.

Areas of Critical Environmental Concern

Under Alternative N, no ACEC would be designated. Management according to the IMP within the 92% of the potential ACEC within the WSAs would provide protection of the relevant and important values.

Alternative A

Impacts from Vegetation

Under Alternative A, no surface-disturbing activities would be allowed within 330 feet on each side of the stream or the 100-year floodplain, whichever is greater, providing protection of the riparian relevant and important values.

Impacts from Visual Resources

Impacts would be similar to those described under Alternative N, except that slightly fewer acres would be designated as VRM Classes I and II (92%), providing less protection to scenic relevant and important values.

Impacts from Special Status Species

As in Alternative N, management actions such as prohibiting the destruction, adverse modification, or fragmentation of listed species habitat; maintaining the integrity of SSS habitat; and habitat improvements would benefit SSS. In Alternative A, additional strategies (such as utilizing seasonal and spatial buffers for surface-disturbing activities and complying with raptor protection guidelines for powerline construction) would be employed to protect raptors and their habitat. These actions would minimize or eliminate impacts to the SSS relevant and important value.

Impacts from Non-WSA Lands with Wilderness Characteristics

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

Under Alternative A, the Dirty Devil SRMA would encompass the Horseshoe Canyon Potential ACEC. The Dirty Devil SRMA management emphasis on primitive and semi-primitive recreation would complement the relevant and important values by focusing recreational use and limiting development.

Impacts from Travel Management

Impacts would be the same as those described under Alternative N.

Impacts from Lands and Realty

Impacts would be the same as those described under Alternative N.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Under Alternative A, 92% of the potential ACEC (the portion within the WSA) would be closed to oil and gas leasing, precluding any impacts from oil and gas exploration or development activities. Oil and gas stipulations in the area outside the WSA vary by alternative, as shown in Table 4-76 below. Alternative A would allow oil and gas exploration subject to moderate constraints (timing limitation, CSU) within 8% of the potential ACEC, which would reduce the potential for impacts to relevant and important values.

Locatable Minerals

Impacts would be the same as those described under Alternative N.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Areas of Critical Environmental Concern

Impacts would be the same as those described under Alternative N.

Proposed RMP

Impacts from Vegetation

Under the Proposed RMP, no surface-disturbing activities would be allowed within 330 feet on each side of the stream or the 100-year floodplain, whichever is greater, providing protection of the riparian relevant and important values.

Impacts from Visual Resources

Visual resource management classes within the potential ACEC, by alternative, are shown in Table 4-74. The higher VRM classes (I and II) would better protect the scenic values and, by limiting surface-disturbing activities, also benefit other relevant and important values. Under the Proposed RMP, 99% of the potential ACEC would be managed for VRM Classes I and II, providing adequate protection of the scenic relevant and important value.

Impacts from Special Status Species

As in Alternative N, management actions under the Proposed RMP such as prohibiting the destruction, adverse modification, or fragmentation of listed species habitat; maintaining the integrity of SSS habitat; and habitat improvements would benefit SSS. Additional strategies (such as utilizing seasonal and spatial buffers for surface-disturbing activities and complying with raptor protection guidelines for powerline construction) would be employed to protect raptors and their habitat. These actions would minimize or eliminate impacts to the SSS relevant and important value.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under the Proposed RMP, 12,200 acres of the Horseshoe Canyon South non-WSA lands with wilderness characteristics would be managed to maintain their wilderness characteristics. Management prescriptions would protect scenic values, reduce or eliminate surface disturbance, and retain public lands in federal ownership. Approximately 1,780 acres of the Horseshoe Canyon South non-WSA lands would overlap with the potential Horseshoe Canyon ACEC, providing indirect protection for relevant and important values within those areas.

Impacts from Recreation

Under the Proposed RMP, the Dirty Devil SRMA would encompass the Horseshoe Canyon Potential ACEC. The Dirty Devil SRMA management emphasis on primitive and semi-primitive recreation would complement the relevant and important values by focusing recreational use and limiting development.

Impacts from Travel Management

OHV use would not threaten relevant and important values under any of the alternatives, including the Proposed RMP, for several reasons. First, no OHV open areas are proposed, precluding impacts from cross-country OHV use. Second, motorized use would be limited to designated routes with only 7 miles of routes inventoried and identified for designation, a nominal amount in such a large area. These routes would remain open under Alternatives N, A, and the Proposed RMP. Third, much of the terrain within the potential ACEC is too rugged to be accessible to vehicles in any case. Therefore, there would be no impact to relevant and important values of the potential Horseshoe Canyon ACEC from motorized use.

Impacts from Lands and Realty

Under the Proposed RMP, proposed decisions for land tenure adjustments could maintain, increase, or decrease the land in federal ownership, having a beneficial or adverse impact on relevant and important values that would be determined in site-specific environmental analysis. With 92% of the potential ACEC being located within the WSA, it would be most likely that land tenure adjustments, if any, would benefit the relevant and important values of the area.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Under the Proposed RMP, 92% of the proposed ACEC (the portion within the WSA) would be closed to oil and gas leasing, precluding any impacts from oil and gas exploration or development activities. The portion of the proposed ACEC outside of the WSA would be open to leasing with minor constraints (1%) or open with NSO (7%). The potential for impacts to relevant and important values from oil and gas exploration or development activities would be unlikely.

Locatable Minerals

Under all alternatives, including the Proposed RMP, only 8% of the potential ACEC could be impacted by mineral exploration and development (because the remainder is within the WSA). Due to the remoteness and low mineral potential within the area, it would be unlikely that mining activity would impact the relevant and important values.

Impacts from Special Designations

Wilderness Study Areas

The potential Horseshoe Canyon ACEC encompasses 37,800 acres of the Horseshoe Canyon WSA. Within the WSA, which represents 92% of the potential ACEC, relevant and important values would be protected from ground-disturbing activities by management under the IMP.

Areas of Critical Environmental Concern

Under the Proposed RMP, no Horseshoe Canyon ACEC would be designated. WSA management and other resource decisions under this alternative for visual resource, travel, and minerals management would provide adequate protection for all the relevant and important values identified within this potential ACEC.

Alternative C

Impacts from Vegetation

Under Alternative C, no surface-disturbing activities would be allowed within 660 feet from riparian areas, providing protection of the riparian relevant and important values.

Impacts from Visual Resources

Impacts would be the same as those described under Alternative N.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative A.

Impacts from Non-WSA Lands with Wilderness Characteristics

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

Impacts would be the same as those described under Alternative A.

Impacts from Travel Management

Impacts would be similar to those described under Alternative N, except that the designated routes would be reduced to 2 miles of open routes under Alternative C.

Impacts from Lands and Realty

Under Alternative C, proposed decisions for land tenure adjustments would benefit all relevant and important values by keeping the land in federal ownership and protecting it from development.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Impacts would be the same as those described under Alternative C.

Locatable Minerals

Impacts would be the same as those described under Alternative N.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Areas of Critical Environmental Concern

Under Alternative C, the Horseshoe Canyon ACEC would be designated on 40,900 acres of public land to protect and provide special management for the relevant and important values. In addition to management direction associated with Alternative C described above, designating the ACEC would allow no uses that would cause irreparable damage to relevant and important values.

Alternative D

Impacts from Vegetation

Impacts would be the same as those described under Alternative C.

Impacts from Visual Resources

Impacts would be similar to those described under Alternative N, except that the entire potential ACEC would be designated as VRM Class I, eliminating any impact to scenic relevant and important values.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative A.

Impacts from Non-WSA Lands with Wilderness Characteristics

A portion of the Horseshoe Canyon South (2,900 acres) and Labyrinth Canyon (1 acre) non-WSA lands with wilderness characteristics lie within the 40,900-acre (RFO portion only) potential Horseshoe Canyon ACEC. Under Alternative D, protecting the non-WSA lands with wilderness characteristics within the Horseshoe Canyon potential ACEC would provide indirect protection for relevant and important values on 2,901 acres. Specifics are disclosed in the visual resources, travel management, minerals and energy, and lands and realty discussions in this section.

Impacts from Recreation

Impacts would be the same as those described under Alternative A.

Impacts from Travel Management

Impacts would be the same as those described under Alternative C.

Impacts from Lands and Realty

Impacts would be similar to those described under Alternative C. Also under Alternative D, proposed withdrawal from mineral entry of the 2,900 acres outside the WSA (to protect the non-WSA lands with wilderness characteristics) would protect relevant and important values from surface disturbance caused by mineral exploration and development.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Impacts from oil and gas leasing would be precluded under Alternative D, which closes all but a small portion of the potential ACEC to oil and gas leasing.

Locatable Minerals

Impacts would be similar to those described under Alternative N. In addition, under Alternative D, 2,900 acres outside the WSA would be proposed for withdrawal from mineral entry to protect non-WSA lands with wilderness characteristics, which would also protect relevant and important values.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Areas of Critical Environmental Concern

Impacts would be the same as those described under Alternative C.

Kingston Canyon Potential ACEC

The Kingston Canyon Potential ACEC encompasses 22,100 total acres of public lands located in the side canyons north and south of the Sevier River between the towns of Kingston and Antimony in Sevier County. Relevant and important values are mule deer, mule deer habitat, and riparian areas.

Impacts to the relevant and important values of this ACEC could occur from the following resource management programs:

- Vegetation
- Fish and Wildlife
- Fire and Fuels Management
- Non-WSA Lands with Wilderness Characteristics
- Travel Management
- Lands and Realty
- Special Designations.

Other programs were determined to have little or no impact on the relevant and important values of this potential ACEC.

Alternative N: No Action

Impacts from Vegetation

Under all alternatives, no surface-disturbing activities would be allowed within identified distances (which vary by alternative) from riparian areas unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the riparian relevant and important values from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment. Under Alternative N, no surface-disturbing activities would be allowed within 500 feet of riparian areas.

Impacts from Fish and Wildlife

Fish and wildlife management actions for the benefit of mule deer and their habitat would benefit those relevant and important values. These management prescriptions and seasonal and spatial restrictions on activities with the potential ACEC vary by alternative. Under Alternative N, a seasonal restriction on oil and gas exploration and development would be required in crucial and high-value mule deer habitat during sensitive seasons, such as fawning. These seasonal restrictions would provide greater protection for the mule deer and habitat relevant and important values than Alternative A, but less than under the Proposed RMP and Alternatives C and D.

Impacts from Fire and Fuels Management

Under Alternative N, unwanted wildfire in crucial mule deer habitats could result in impacts to crucial mule deer habitats. However, this alternative includes stabilization and rehabilitation efforts as needed for every wildland fire. Stabilization and rehabilitation efforts would benefit fish and wildlife species over the long term by decreasing erosion and restoring or improving habitat conditions following a fire event.

Impacts from Non-WSA Lands with Wilderness Characteristics

All of the Phonolite Hill (7,900 acres) and portions of the Kingston Ridge (2,100 acres) and Rocky Ford (6,400 acres) non-WSA lands with wilderness characteristics lie within the 22,100-acre potential

Kingston Canyon ACEC. No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under Alternative N, resulting in no impacts to relevant and important values.

Impacts from Travel Management

Proposed OHV area designations, by alternative, are shown in Table 4-77. Under Alternative N, continuing to manage the area as open to OHV use would cause the greatest adverse impacts to mule deer and riparian values by allowing harassment of mule deer, crushing and removal of riparian vegetation, and loss of habitat.

Table 4-77. OHV Area Designations within the Kingston Canyon Potential ACEC

		Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Open	Acres	22,100	18,800	0	0	0
	% Area	100%	85%	0%	0%	0%
Limited	Acres	0	3,300	22,100	22,100	5,700
	% Area	0%	15%	100%	100%	26%
Closed	Acres	0	0	0	0	16,400
	% Area	0%	0%	0%	0%	74%

Impacts from Lands and Realty

No lands within the Kingston Canyon Potential ACEC have been identified as available for FLPMA Section 203 sales. Under Alternative N, proposed decisions for land tenure adjustments could maintain, increase, or decrease the land in federal ownership, having a beneficial or adverse impact on relevant and important values that would be determined in site-specific environmental analysis.

Impacts from Special Designations

Areas of Critical Environmental Concern

Under Alternative N, no ACEC would be designated and no special management prescriptions would be implemented to specifically protect the relevant and important values of the area.

Alternative A

Impacts from Vegetation

Impacts would be similar to those described under Alternative N, except that no surface-disturbing activities would be allowed within 330 feet on each side of the stream or the 100-year floodplain, whichever is greater.

Impacts from Fish and Wildlife

Under Alternative A, no seasonal or spatial restrictions of human presence or surface-disturbing activities would be required, which could result in greater impacts to mule deer and habitats during critical periods. This alternative would provide the least protection to mule deer and their habitat.

Impacts from Fire and Fuels Management

Impacts would be the same as those described under Alternative N.

Impacts from Non-WSA Lands with Wilderness Characteristics

Impacts would be the same as those described under Alternative N.

Impacts from Travel Management

Under Alternative A, managing the potential ACEC as open and limited would continue most of the impacts in the open areas and reduce impacts in limited use areas. Adverse impacts under Alternative A would be slightly less than Alternative N.

Impacts from Lands and Realty

Impacts would be the same as those described under Alternative N.

Impacts from Special Designations

Areas of Critical Environmental Concern

Under Alternative A, no ACEC would be designated and no special management prescriptions would be implemented to specifically protect the relevant and important values of the area.

Proposed RMP

Impacts from Vegetation

Under all alternatives, no surface-disturbing activities would be allowed within identified distances (which vary by alternative) from riparian areas unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the riparian relevant and important values from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment. Under the Proposed RMP no surface-disturbing activities would be allowed within 330 feet on each side of the stream or the 100-year floodplain, whichever is greater. Although the protection area is smaller than Alternatives N, C and D, it would provide adequate protection to the riparian relevant and important values of the potential Kingston Canyon ACEC.

Impacts from Fish and Wildlife

Seasonal or spatial restriction of human presence or surface-disturbing activities under this alternative could provide greater benefits to the mule deer and mule deer habitat relevant and important values than Alternatives N and A, but less than Alternatives C and D. Prescriptive grazing would be used to favor forage production for big game high-priority and crucial winter range. OHV use would be limited to designated routes in mule deer crucial habitat, and seasonal restrictions of surface-disturbing activities would be required in crucial mule deer habitats.

Impacts from Fire and Fuels Management

Impacts would be similar to those described under Alternative N, except that the Proposed RMP would include stabilization efforts to sustain ecosystems, improve public health, improve safety, and help communities protect infrastructure. Priority would be given to areas that pose a threat to life and property and areas with a potential for invasive weeds. Stabilization efforts would have the potential to benefit the mule deer and mule deer habitat relevant and important values in the long term.

Impacts from Non-WSA Lands with Wilderness Characteristics

All of the Phonolite Hill (7,900 acres) and portions of the Kingston Ridge (2,100 acres) and Rocky Ford (6,400 acres) non-WSA lands with wilderness characteristics lie within the 22,100-acre potential Kingston Canyon ACEC. These areas would not be managed to for wilderness characteristics in the Proposed RMP, resulting in no impacts to relevant and important values.

Impacts from Travel Management

Under the Proposed RMP, limiting vehicles to designated routes would reduce adverse impacts to mule deer habitat and harassment to the mule deer populations caused by cross-country vehicle use, as compared with Alternatives N and A. By limiting motorized use to designated routes, the impacts of crushing and removal of riparian vegetation, and loss of habitat associated with motorized activities would be eliminated or reduced to areas adjacent to the routes. Therefore, the Proposed RMP would provide protection to the mule deer and mule deer habitat relevant and important values of the potential Kingston Canyon ACEC.

Impacts from Lands and Realty

No lands within the Kingston Canyon Potential ACEC have been identified as available for FLPMA Section 203 sales. Proposed decisions for land tenure adjustments could maintain, increase, or decrease the land in federal ownership, having a beneficial or adverse impact on relevant and important values that would be determined in site-specific environmental analysis. Lands with riparian values would likely not be offered for disposal, thus not impacting the riparian relevant and important value. Any sale of land within the potential ACEC would result in a loss of mule deer habitat in federal ownership and would be considered in site-specific analysis prior to offering the land for sale. Actual impacts to the mule deer and mule deer habitat relevant and important values would depend upon the acreage sold and how the land is used and developed after it leaves federal ownership.

Impacts from Special Designations

Areas of Critical Environmental Concern

Under the Proposed RMP, the potential Kingston Canyon ACEC would not be designated and no special management prescriptions would be implemented to specifically protect the relevant and important values of the area. Existing laws, rules, and regulations, as well as management decisions for riparian protection zones, seasonal/spatial restrictions on surface disturbances, and travel management would adequately protect the relevant and important riparian, mule deer and mule habitat values of the potential ACEC. The UDWR purchased and set aside a 319 acre wildlife management area in Kingston Canyon and would provide additional protection for the ACEC's relevant and important values (mule deer, mule deer habitat, and riparian areas).

Alternative C

Impacts from Vegetation

Impacts would be similar to those described under Alternative N, except that no surface-disturbing activities would be allowed within 660 feet of riparian areas.

Impacts from Fish and Wildlife

Under Alternative C, prescriptive grazing would be used to favor forage production for big game ranges. OHV use in mule deer crucial winter range would be limited to designated routes or closed. Seasonal restrictions would apply to surface-disturbing activities in crucial and high-value mule deer habitats. Alternatives C and D would provide the greatest protection for the relevant and important values of mule deer and mule deer habitat.

Impacts from Fire and Fuels Management

Under Alternative C, the proposed decision to suppress unwanted wildfire in crucial mule deer habitats would benefit the mule deer by protecting the browse species that could otherwise be damaged by wildland fire and subsequently out-competed by undesirable species.

Impacts from Non-WSA Lands with Wilderness Characteristics

Impacts would be the same as those described under Alternative N.

Impacts from Travel Management

Impacts would be the same as those described under the Proposed RMP.

Impacts from Lands and Realty

No lands within the Kingston Canyon Potential ACEC have been identified as available for FLPMA Section 203 sales. Under Alternative C, proposed decisions for land tenure adjustments benefit all relevant and important values by keeping the land in federal ownership and protecting it from development.

Impacts from Special Designations

Areas of Critical Environmental Concern

Under Alternative C, Kingston Canyon ACEC would be designated on 22,100 acres of public land to protect and provide special management for the mule deer (e.g., mule deer habitat) and riparian relevant and important values. In addition to management direction associated with Alternative C described above, designating the ACEC would allow no uses that would cause irreparable damage to relevant and important values.

Alternative D

Impacts from Vegetation

Impacts would be the same as those described under Alternative C.

Impacts from Fish and Wildlife

Impacts would be similar to those described under Alternative C, except that additional acres would be closed to OHV use in Alternative D. Alternatives C and D would provide the greatest protection for the relevant and important values of mule deer and mule deer habitat.

Impacts from Fire and Fuels Management

Impacts would be the same as those described under Alternative C.

Impacts from Non-WSA Lands with Wilderness Characteristics

All of the Phonolite Hill (7,900 acres) and portions of the Kingston Ridge (2,100 acres) and Rocky Ford (6,400 acres) non-WSA lands with wilderness characteristics lie within the 22,100-acre potential Kingston Canyon ACEC. Under Alternative D, protecting the non-WSA lands with wilderness characteristics within the Kingston Canyon ACEC would provide indirect protection for relevant and important mule deer value on 16,400 acres, but it could limit options for managing mule deer habitat.

Impacts from Travel Management

Closing 74% of the potential ACEC to vehicle use would reduce adverse impacts to deer habitat and harassment to the deer populations caused by cross-country vehicle use, as compared with all other alternatives.

Impacts from Lands and Realty

Impacts would be the same as those described under Alternative C.

Impacts from Special Designations

Areas of Critical Environmental Concern

Under Alternative D, Kingston Canyon ACEC would be designated on 22,100 acres of public land to protect and provide special management for the mule deer (e.g., mule deer habitat) and riparian relevant and important values. In addition to management direction associated with Alternative D described above, designating the ACEC would allow no uses that would cause irreparable damage to relevant and important values.

Little Rockies Potential ACEC

The Little Rockies Potential ACEC totals 49,200 acres located in the southeast corner of Garfield County. It includes the entire Little Rockies National Natural Landmark—an NPS designation. Seventy-six percent of the potential ACEC is within the Little Rockies WSA. Relevant and important values are scenic, wildlife (Desert bighorn sheep), SSS (Townsend's big-eared bat and hole-in-the-rock prairie clover), and ecological (riparian) values.

Impacts to the relevant and important values of this ACEC could occur from the following resource management programs:

- Vegetation
- Visual Resources
- Special Status Species
- Fish and Wildlife
- Non-WSA Lands with Wilderness Characteristics
- Travel Management
- Lands and Realty
- Minerals and Energy
- Special Designations.

Other programs were determined to have little or no impact on the relevant and important values of this potential ACEC.

Alternative N: No Action

Impacts from Vegetation

Under all alternatives, no surface-disturbing activities would be allowed within identified distances (which vary by alternative) from riparian areas unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the riparian relevant and important value from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment. Under Alternative N, no surface-disturbing activities would be allowed within 500 feet of riparian areas.

Impacts from Visual Resources

Visual resource management classes within the potential ACEC, by alternative, are shown in Table 4-78. Under Alternative N, all lands within the potential ACEC would be designated as VRM Class I or II, protecting scenic values.

Table 4-78. VRM Class Designations within Little Rockies Potential ACEC

		Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Class I	Acres	0	37,400	37,400	37,400	46,300
	% ACEC	0%	76%	76%	76%	94%
Class II	Acres	49,200	0	11,800	11,800	2,900
	% ACEC	100%	0%	24%	24%	6%
Class III	Acres	0	0	0	0	0
	% ACEC	0%	0%	0%	0%	0%
Class IV	Acres	0	11,800	0	0	0
	% ACEC	0%	24%	0%	0%	0%

Impacts from Special Status Species

Under all alternatives, management actions such as prohibiting the destruction, adverse modification, or fragmentation of listed species habitat; maintaining the integrity of SSS habitat; and habitat improvements would benefit SSS.

Impacts from Fish and Wildlife

Under all alternatives, proposed decisions prohibiting the conversion of classification of livestock from cattle to sheep would benefit the Desert bighorn sheep value by eliminating the threat of disease spread by domestic sheep. The proposed decision to allow Desert bighorn sheep reintroductions would have a beneficial impact by augmenting the herd to provide for genetic diversity, which would increase the health of the population. The proposed decision to limit surface-disturbing activities near springs would have a beneficial impact on riparian vegetation, Desert bighorn sheep, and other riparian species. Proposed decisions for limiting ground-disturbing activities in Desert bighorn sheep habitat vary by alternative. Under Alternative N, not limiting activities in Desert bighorn sheep habitat during lambing and other sensitive seasons could adversely affect the Desert bighorn sheep by allowing disturbance and harassment during critical periods.

Impacts from Non-WSA Lands with Wilderness Characteristics

A portion of the Little Rockies (8,700 acres) non-WSA lands with wilderness characteristics lies within the 49,200-acre potential Little Rockies ACEC. No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under Alternative N, resulting in no impacts to relevant and important values.

Impacts from Travel Management

OHV area designations, by alternative, are shown in Table 4-79. Under Alternative N, continuing to allow cross-country travel in 19% of the potential ACEC would threaten relevant and important values in that area with ground disturbance or harassment.

Table 4-79. OHV Area Designations within Little Rockies Potential ACEC

		Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Open	Acres	9,200	0	0	0	0 ac
	% Area	19%	0%	0%	0%	0%
Limited	Acres	2,500	49,200	11,800	10,800	2,300
	% Area	5%	100%	24%	22%	5%
Closed	Acres	37,500	0	37,400	38,400	46,900
	% Area	76%	0%	76%	78%	95%

Impacts from Lands and Realty

Withdrawing land from mineral entry would benefit all relevant and important values by protecting them from ground-disturbing activities associated with the exploration and development of locatable minerals. No withdrawals from mineral entry are proposed under Alternative N. Therefore, there would be no impacts to relevant and important values.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Lands open to oil and gas leasing, by alternative, are shown in Table 4-80. Under all alternatives, there would be no impacts to relevant and important values within the WSA, which is closed to oil and gas leasing. The Little Rockies WSA represents 76% of the potential ACEC. Under Alternative N, 11% of the potential ACEC would be available for leasing with standard terms, which could result in impacts to relevant and important values. However, the potential ACEC is in a portion of the lands managed by the RFO identified as having low development potential for oil and gas leasing. Few, if any, wells are expected to be drilled in this area in the next 15 to 20 years.

Table 4-80. Leasing Stipulations within Little Rockies Potential ACEC

		Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Standard Lease Terms	Acres	5,400	11,800	4,000	0	0
	% Area	11%	24%	8%	0%	0%
Controlled Surface Use or Timing Stipulations (Seasonal)	Acres	0	0	2,200	0	0
	% Area	0%	0%	4%	0%	0%
No Surface Occupancy	Acres	0	0	5,400	11,800	2,300
	% Area	0%	0%	11%	24%	5%
Closed	Acres	43,800	37,400	37,600	37,400	46,900
	% Area	89%	76%	76%	76%	95%

Locatable Minerals

Under Alternative N, 24% of the potential ACEC (the area outside the WSA) could be impacted by mineral exploration and development. There is potential for mineral exploration within the area. Mitigation such as minimizing visual impacts and avoiding sensitive seasons or areas for SSS would be addressed in site-specific analysis as proposals are reviewed. These mitigation measures would reduce but may not eliminate impacts to relevant and important values.

Salable Minerals

In Alternative N, the effects of salable mineral disposal on relevant and important values would be considered on a case-by-case basis outside the WSA. Disposal of salable minerals would not be allowed within the WSA. Mitigation measures would likely be developed if potential impacts were identified for relevant and important values.

Impacts from Special Designations

Wilderness Study Areas

The potential ACEC encompasses 37,400 acres of the Little Rockies WSA. Within the WSA, relevant and important values would be protected from ground-disturbing activities by management under the IMP.

Wild and Scenic Rivers

The only eligible WSR within the potential ACEC is a portion of Maidenwater Creek. Due to the small portion of the potential ACEC encompassed by Maidenwater Creek, neither recommending nor not recommending it as a suitable WSR would have any perceptible impact on any relevant and important value.

Areas of Critical Environmental Concern

Under Alternative N, no ACEC would be designated. Management according to the IMP within the 76% of the potential ACEC within the Little Rockies WSA would provide protection of the relevant and important values within that portion of the potential ACEC.

Alternative A

Impacts from Vegetation

Under Alternative A, no surface-disturbing activities would be allowed within 330 feet on each side of the stream or the 100-year floodplain, whichever is greater, unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the riparian relevant and important value from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment.

Impacts from Visual Resources

Under Alternative A, lands outside the WSA would be designated as VRM Class IV, which could allow activities that would adversely impact the scenic values within 24% of the potential ACEC.

Impacts from Special Status Species

Under Alternative A, management actions such as prohibiting the destruction, adverse modification, or fragmentation of listed species habitat; maintaining the integrity of SSS habitat; and habitat improvements would benefit SSS. Additional strategies (such as utilizing seasonal and spatial buffers for surface-disturbing activities and complying with raptor protection guidelines for powerline construction) would

be employed to protect raptors and their habitat. These actions would minimize or eliminate impacts to the SSS relevant and important values.

Impacts from Fish and Wildlife

Impacts would be the same as those described under Alternative N.

Impacts from Non-WSA Lands with Wilderness Characteristics

Impacts would be the same as those described under Alternative N.

Impacts from Travel Management

Under Alternative A, limiting OHV use to designated routes throughout the potential ACEC would reduce vehicle impacts to relevant and important values, as compared with Alternative N.

Impacts from Lands and Realty

Impacts would be the same as those described under Alternative N.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Alternative A would allow leasing subject to standard terms and conditions for all lands within the potential ACEC outside the WSA. This alternative would result in the greatest potential for impacts. However, the potential ACEC is in a portion of the lands managed by the RFO identified as having low development potential for oil and gas leasing. Few, if any, wells are expected to be drilled in this area in the next 15 to 20 years.

Locatable Minerals

Impacts would be the same as those described under Alternative N.

Salable Minerals

Impacts would be the same as those described under Alternative N.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Impacts would be the same as those described under Alternative N.

Areas of Critical Environmental Concern

Impacts would be the same as those described under Alternative N.

Proposed RMP

Impacts from Vegetation

Under the Proposed RMP, no surface-disturbing activities would be allowed within 330 feet on each side of the stream or the 100-year floodplain, whichever is greater, unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the riparian relevant and important value from surface-

disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment.

Impacts from Visual Resources

Under the Proposed RMP, all lands within the potential ACEC would be designated as VRM Class I (76%) or II (24%), protecting scenic relevant and important values of the potential Little Rockies ACEC.

Impacts from Special Status Species

Management actions such as prohibiting the destruction, adverse modification, or fragmentation of listed species habitat; maintaining the integrity of SSS habitat; and habitat improvements would benefit SSS. Additional strategies (such as utilizing seasonal and spatial buffers for surface-disturbing activities and complying with raptor protection guidelines for powerline construction) would be employed to protect raptors and their habitat. These actions would minimize or eliminate impacts to the SSS relevant and important values.

Impacts from Fish and Wildlife

The proposed decisions prohibiting the conversion of classification of livestock from cattle to sheep would benefit the Desert bighorn sheep relevant and important value by eliminating the threat of disease spread by domestic sheep. The proposed decision to allow Desert bighorn sheep reintroductions would have a beneficial impact by augmenting the herd to provide for genetic diversity, which would increase the health of the population. The proposed decision to limit surface-disturbing activities near springs would have a beneficial impact on the riparian, Desert bighorn sheep, and wildlife relevant and important values. Proposed decisions for limiting ground-disturbing activities in Desert bighorn sheep habitat vary by alternative. Under the Proposed RMP, limiting activities in Desert bighorn sheep habitat during lambing and other sensitive seasons would benefit Desert bighorn sheep by minimizing disturbance and harassment during critical periods, providing additional benefits to this relevant and important value.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under the Proposed RMP, 9,500 acres of the Little Rockies non-WSA lands with wilderness characteristics would be managed to maintain their wilderness characteristics. Management prescriptions would protect scenic values, reduce or eliminate surface disturbance, and retain public lands in federal ownership. Approximately 5,480 acres (11% of the Little Rockies non-WSA lands) would overlap with the potential Little Rockies ACEC, providing indirect protection for all the relevant and important values within those areas.

Impacts from Travel Management

Under the Proposed RMP, the WSA would be closed to OHVs (76% of the potential ACEC) and the remaining portion of the potential ACEC would restrict OHVs to designated routes. This would reduce or eliminate vehicle impacts to the relevant and important values of the potential Little Rockies ACEC.

Impacts from Lands and Realty

Withdrawing land from mineral entry would benefit all relevant and important values by protecting them from ground-disturbing activities associated with the exploration and development of locatable minerals. However, no withdrawals from mineral entry are proposed under the Proposed RMP, resulting in no impacts to relevant and important values.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Under the Proposed RMP, only 8% of the potential ACEC would be open to oil and gas leasing subject to standard terms and conditions, 4% would be leased subject to moderate constraints (timing limitation, CSU), 11% would be subject to major constraints (NSO) and the 76% within the WSA would be closed to leasing. The potential for impacts would be reduced or eliminated compared with Alternatives N and A. In addition, the potential ACEC is in a portion of the lands managed by the RFO identified as having low development potential for oil and gas leasing. Few, if any, wells are expected to be drilled in this area in the next 15 to 20 years.

Locatable Minerals

Impacts would be the same as those described under Alternative N. Under the Proposed RMP, 24% of the potential ACEC (the area outside the WSA) could be impacted by mineral exploration and development. There is potential for mineral exploration within the area. Locatable mineral exploration and development would be allowed under the General Mining Law. FLPMA requires BLM to regulate mining activities to prevent undue and unnecessary environmental degradation to resources. Mitigation such as minimizing visual impacts and avoiding sensitive seasons or areas for SSS would be addressed in site-specific analysis as proposals are reviewed. These mitigation measures would reduce but may not eliminate impacts to relevant and important values.

Salable Minerals

Impacts would be the same as those described under Alternative N. The effects of salable mineral disposal on relevant and important values would be considered on a case-by-case basis outside the WSA. Disposal of salable minerals would not be allowed within the WSA. Management for visual resources, riparian protection zones, and SSS and wildlife habitats provide protection from surface disturbing activities such as mineral material sales. Mitigation measures would be developed or the action denied if potential impacts were identified for the scenic, riparian, SSS and wildlife relevant and important values of the potential Little Rockies ACEC.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N. The potential ACEC encompasses 37,400 acres of the Little Rockies WSA. Within the WSA, relevant and important values would be protected from ground-disturbing activities by management under the IMP.

Wild and Scenic Rivers

The only eligible WSR within the potential ACEC is a portion of Maidenwater Creek. Due to the small portion of the potential ACEC encompassed by Maidenwater Creek, neither recommending nor not recommending it as a suitable WSR would have any perceptible impact on any relevant and important value.

Areas of Critical Environmental Concern

Under the Proposed RMP, no ACEC would be designated. Management according to the IMP within the 76% of the potential ACEC within the Little Rockies WSA would provide protection of the relevant and important values within that portion of the potential ACEC. Existing laws, rules, and regulations, as well as management decisions for riparian protection zones, VRM, seasonal/spatial restrictions on surface disturbances, non-WSA lands with wilderness characteristics, and travel management would adequately protect all the relevant and important values of the potential Little Rockies ACEC.

Alternative C

Impacts from Vegetation

Under Alternative C, no surface-disturbing activities would be allowed within 660 feet from riparian areas unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the riparian relevant and important value from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment.

Impacts from Visual Resources

Impacts would be the same as those described under Alternative N.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative A.

Impacts from Fish and Wildlife

Impacts would be the same as those described under the Proposed RMP.

Impacts from Non-WSA Lands with Wilderness Characteristics

Impacts would be the same as those described under Alternative N.

Impacts from Travel Management

Impacts would be similar to those described under the Proposed RMP, except that Desert bighorn sheep habitat outside the WSA would also be closed to OHVs, providing additional protection for that relevant and important value.

Impacts from Lands and Realty

In Alternative C, the potential ACEC outside the WSA is proposed to be withdrawn from mineral entry, precluding locatable mineral development, which would protect the relevant and important values from ground disturbance caused by mineral exploration and development. If the area is not withdrawn but an ACEC is designated, a plan of operations would be required that would address the effects on relevant and important values and other resource concerns.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Under Alternative C, 24% of the potential lands would be leased subject to major constraints (NSO), with the remaining 76% within the WSA closed to leasing. This would eliminate the potential for impacts to relevant and important values.

Locatable Minerals

Under Alternative C, the area outside the WSA would be proposed for withdrawal from mineral entry, protecting the relevant and important values from disturbances associated with mining exploration and development. Additionally, within a designated ACEC, federal regulations (43 CFR 3809.11 (c)(3)) require that a plan of operation be submitted for any operation causing surface disturbance greater than casual use. This regulation would mitigate the impacts of mining exploration and development on relevant and important values.

Salable Minerals

Under Alternative C, no disposal of salable minerals would be allowed in the ACEC, resulting in no surface disturbance and no impact to the relevant and important values.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Impacts would be the same as those described under Alternative N.

Areas of Critical Environmental Concern

Under Alternative C, Little Rockies ACEC would be designated on 49,200 acres of public land to protect and provide special management for the relevant and important values. In addition to management direction associated with Alternative C described above, designating the ACEC would allow no uses that would cause irreparable damage to relevant and important values.

Alternative D

Impacts from Vegetation

Impacts would be the same as those described under Alternative C.

Impacts from Visual Resources

Impacts would be similar to those described under Alternative N. Scenic values would be best protected under Alternative D, which would designate 94% of the potential ACEC as VRM Class I to protect the existing character of the landscape.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative A.

Impacts from Fish and Wildlife

Impacts would be the same as those described under the Proposed RMP.

Impacts from Non-WSA Lands with Wilderness Characteristics

A portion of the Little Rockies (8,700 acres) non-WSA lands with wilderness characteristics lies within the 49,200-acre potential Little Rockies ACEC. Under Alternative D, protecting the non-WSA lands with wilderness characteristics within the Little Rockies ACEC would provide indirect protection for relevant and important values on 8,700 acres. Specifics are disclosed in the visual resource management, travel, fluid minerals, and lands and realty (withdrawals) discussions in this section.

Impacts from Travel Management

Under Alternative D, closing the WSA and the non-WSA lands with wilderness characteristics to OHVs (95% of the potential ACEC) would best protect relevant and important values from vehicle impacts.

Impacts from Lands and Realty

Impacts would be the same as those described under Alternative C.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Alternative D would best protect relevant and important values from ground-disturbing activities associated with oil and gas exploration and development by closing 95% of the potential ACEC to oil and gas leasing and allowing leases subject to major constraints (NSO) in the remaining 5%.

Locatable Minerals

Impacts would be the same as those described under Alternative C.

Salable Minerals

Impacts would be the same as those described under Alternative C.

Impacts from Special Designations

Wilderness Study Areas

Impacts would be the same as those described under Alternative N.

Wild and Scenic Rivers

Impacts would be the same as those described under Alternative N.

Areas of Critical Environmental Concern

Impacts would be the same as those described under Alternative C.

Lower Muddy Creek Potential ACEC

The Lower Muddy Creek Potential ACEC, located along Muddy Creek north of Hanksville, totals 16,200 acres of the RFO, with additional acreage to the north in the lands managed by the Price Field Office. The discussion here is limited to the RFO portion. Relevant and important values of this potential ACEC are scenic, SSS (Wright fishhook cactus and Heil's beavertail cactus), and riparian.

Impacts to the relevant and important values of this ACEC could occur from the following resource management programs:

- Vegetation
- Visual Resources
- Special Status Species
- Non-WSA Lands with Wilderness Characteristics
- Travel Management
- Minerals and Energy
- Special Designations.

Other programs were determined to have little or no impact on the relevant and important values of this potential ACEC.

Alternative N: No Action

Impacts from Vegetation

Under all alternatives, no surface-disturbing activities would be allowed within identified distances (which vary by alternative) from riparian areas unless it could be shown that there are no practical

alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the riparian relevant and important values from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment. Under Alternative N, no surface-disturbing activities would be allowed within 500 feet of riparian areas.

Impacts from Visual Resources

VRM class designations, by alternative, are shown in Table 4-81. The higher VRM classes (I and II) would better protect the scenic values and, by limiting surface-disturbing activities, also benefit other relevant and important values. Under Alternative N, 97% of the potential ACEC would be managed as VRM Class II, which would protect the scenic relevant and important values.

Table 4-81. VRM Class Designations within Lower Muddy Creek Potential ACEC

		Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Class I	Acres	0	0	0	0	15,800
	% ACEC	0%	0%	0%	0%	98%
Class II	Acres	15,600	0	15,600	16,200	400
	% ACEC	97%	0%	97%	100%	2%
Class III	Acres	400	0	400	0	0
	% ACEC	2%	0%	2%	0%	0%
Class IV	Acres	200	16,200	200	0	0
	% ACEC	1%	100%	1%	0%	0%

Impacts from Special Status Species

Under all alternatives, management actions such as prohibiting the destruction, adverse modification, or fragmentation of listed species habitat; maintaining the integrity of SSS habitat; and habitat improvements would benefit SSS.

Impacts from Non-WSA Lands with Wilderness Characteristics

A portion of the Wild Horse Mesa (15,800 acres) non-WSA lands with wilderness characteristics lies within the 16,200-acre (RFO portion only) potential Lower Muddy Creek ACEC. No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under Alternative N, resulting in no additional protection for relevant and important values.

Impacts from Travel Management

OHV area designations, by alternative, are shown in Table 4-82. Alternative N would continue to allow cross-country vehicle travel within all of the potential ACEC, which would adversely impact the scenic, riparian, and special status plant species values if the OHVs travel where these values are present. Plants could be crushed, damaged, or destroyed; riparian areas disrupted; and new trails established in scenic areas.

Table 4-82. OHV Area Designations within Lower Muddy Creek Potential ACEC

		Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Open	Acres	16,200	16,200	0	0	0
	% Area	100%	100%	0%	0%	0%
Limited	Acres	0	0	16,200	1,600	300
	% Area	0%	0%	100%	10%	2%
Closed	Acres	0	0	0	14,600	15,900
	% Area	0%	0%	0%	90%	98%

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Lands open to oil and gas leasing, by alternative, are shown in Table 4-83. Under Alternative N, all of the potential ACEC would be open to oil and gas leasing under standard terms and conditions. Among the alternatives, this proposed decision would pose the greatest risk to relevant and important values from surface disturbance caused by oil and gas exploration. However, the potential ACEC is in a portion of land managed by the RFO identified as having low development potential for oil and gas leasing. Few, if any, wells are expected to be drilled in this area in the next 15 to 20 years.

Table 4-83. Lease Stipulations within Lower Muddy Creek Potential ACEC

		Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Standard Lease Terms	Acres	16,200	16,200	7,500	0	0
	% Area	100%	100%	46%	0%	0%
Controlled Surface Use or Timing Stipulations	Acres	0	0	200	0	0
	% Area	0%	0%	1%	0%	0%
No Surface Occupancy	Acres	0	0	8,500	0	0
	% Area	0%	0%	52%	0%	0%
Closed	Acres	0	0	0	16,200	16,200
	% Area	0%	0%	0%	100%	100%

Locatable Minerals

Under Alternative N, exploration and development of locatable minerals could impact relevant and important values sensitive to surface disturbance. Locatable mineral exploration and development would be allowed under the General Mining Law. FLPMA requires BLM to regulate mining activities to prevent undue and unnecessary environmental degradation to resources. SSS would be protected by law and BLM policy. This would minimize impacts of mining activities on relevant and important values of the potential ACEC.

Impacts from Special Designations

Areas of Critical Environmental Concern

Under Alternative N, no ACEC would be designated and no special management prescriptions would be implemented to specifically protect the relevant and important values of the area. There would be a potential for impacts to relevant and important values from continued cross-country OHV use under this alternative.

Alternative A

Impacts from Vegetation

Under Alternative A, no surface-disturbing activities would be allowed within 330 feet on each side of the stream or the 100-year floodplain, whichever is greater, unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the riparian relevant and important value from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment.

Impacts from Visual Resources

The higher VRM classes (I and II) would better protect the scenic values and, by limiting surface-disturbing activities, also benefit other relevant and important values. Conversely, areas designated as VRM Class III or IV would be subject to actions that allow for greater landscape modification and therefore greater surface disturbance. Alternative A would provide no protection for scenic values by designating all of the potential ACEC as VRM Class IV.

Impacts from Special Status Species

Under Alternative A, management actions such as prohibiting the destruction, adverse modification, or fragmentation of listed species habitat; maintaining the integrity of SSS habitat; and habitat improvements would benefit SSS. Additional strategies (such as utilizing seasonal and spatial buffers for surface-disturbing activities and complying with raptor protection guidelines for powerline construction) would be employed to protect raptors and their habitat. These actions would minimize or eliminate impacts to the SSS relevant and important values.

Impacts from Non-WSA Lands with Wilderness Characteristics

Impacts would be the same as those described under Alternative N.

Impacts from Travel Management

Impacts would be the same as those described under Alternative N.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Impacts would be the same as those described under Alternative N.

Locatable Minerals

Impacts would be the same as those described under Alternative N.

Impacts from Special Designations

Areas of Critical Environmental Concern

Under Alternative A, no ACEC would be designated and no special management prescriptions would be implemented to specifically protect the relevant and important values of the area. This alternative would result in the greatest potential for impacts to relevant and important values due to resource decisions for visual resource and travel management.

Proposed RMP

Impacts from Vegetation

Under the Proposed RMP, no surface-disturbing activities would be allowed within 330 feet on each side of the stream or the 100-year floodplain, whichever is greater, unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the riparian relevant and important value from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment.

Impacts from Visual Resources

Impacts would be the same as those described under Alternative N. VRM class designations, by alternative, are shown in Table 4-81. The higher VRM classes (I and II) would better protect the scenic values and, by limiting surface-disturbing activities, also benefit other relevant and important values. Under the Proposed RMP, 97% of the potential ACEC would be managed as VRM Class II, limiting surface disturbing activities which would protect the scenic relevant and important values. This management would also indirectly benefit the SSS and riparian relevant and important values of the potential Lower Muddy Creek ACEC.

Impacts from Special Status Species

Under the Proposed RMP, management actions such as prohibiting the destruction, adverse modification, or fragmentation of listed species habitat; maintaining the integrity of SSS habitat; and habitat improvements would benefit SSS. Additional strategies (such as utilizing seasonal and spatial buffers for surface-disturbing activities and complying with raptor protection guidelines for powerline construction) would be employed to protect raptors and their habitat. These actions would minimize or eliminate impacts to the SSS relevant and important values.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under the Proposed RMP, management prescriptions to maintain wilderness characteristics on 8,700 acres of the Wild Horse Mesa non-WSA lands with wilderness characteristics area that overlap the Lower Muddy Creek ACEC would provide an indirect protection for relevant and important values within that portion of the potential ACEC. Management prescriptions would protect scenic values, reduce or eliminate surface disturbance, and retain public lands in federal ownership.

Impacts from Travel Management

Under the Proposed RMP, no areas within the potential ACEC would be open to cross-country travel. Motorized use would be limited to designated routes. Limiting OHV use would reduce the impacts to relevant and important values because use would be confined to designated routes, although there could be some impacts if relevant and important values were located on or adjacent to open routes. The potential for impacts to relevant and important values from cross-country OHV use would be eliminated within this alternative.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Under the Proposed RMP, 52% of the potential ACEC would be open to oil and gas leasing subject to major constraints (NSO) which would protect the relevant and important values from surface disturbances caused by oil and gas exploration and development within most of the area. In addition, the potential ACEC is in a portion of land managed by the RFO identified as having low development potential for oil and gas leasing. Few, if any, wells are expected to be drilled in this area in the next 15 to 20 years.

Locatable Minerals

Impacts would be the same as those described under Alternative N. Under the Proposed RMP, exploration and development of locatable minerals could impact relevant and important values sensitive to surface disturbance. Locatable mineral exploration and development would be allowed under the General Mining Law. FLPMA requires BLM to regulate mining activities to prevent undue and unnecessary environmental degradation to resources. SSS would be protected by law and BLM policy. This would minimize impacts of mining activities on relevant and important values of the potential ACEC.

Impacts from Special Designations

Areas of Critical Environmental Concern

Under the Proposed RMP, no ACEC would be designated and no special management prescriptions would be implemented to specifically protect the relevant and important values of the area. Existing laws, rules, and regulations, as well as resource decisions within the Proposed RMP that limit surface disturbance (i.e., managing the Wild Horse Mesa non-WSA lands for wilderness characteristics), would provide adequate protection to all the relevant and important values of the potential ACEC.

Alternative C

Impacts from Vegetation

Under Alternative C, no surface-disturbing activities would be allowed within 660 feet from riparian areas unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the riparian relevant and important value from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment.

Impacts from Visual Resources

Under Alternative C, the potential ACEC would be designated as VRM Class II, which would eliminate the potential for impacts to the relevant and important values.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative A.

Impacts from Non-WSA Lands with Wilderness Characteristics

Impacts would be the same as those described under Alternative N.

Impacts from Travel Management

Under Alternative C, no areas would be open to cross-country use, vehicles would be limited to designated routes within 10% of the potential ACEC, and the remaining 90% would be closed to motor vehicles. Although there could be some impacts if relevant and important values were located on or adjacent to designated routes, this alternative would reduce or eliminate potential impacts by eliminating cross-country use.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Under Alternative C, all of the potential ACEC would be closed to leasing, precluding any impacts to relevant and important values from oil and gas leasing.

Locatable Minerals

Under Alternative C, within a designated ACEC, federal regulations (43 CFR 3809.11 (c)(3)) require that a plan of operation be submitted for any operation causing surface disturbance greater than casual use. This regulation would mitigate the impacts of mining exploration and development on relevant and important values.

Impacts from Special Designations

Areas of Critical Environmental Concern

Under Alternative C, Lower Muddy Creek ACEC would be designated on 16,200 acres of public land to protect and provide special management for the relevant and important values. In addition to management direction associated with Alternative C described above, designating the ACEC would allow no uses that would cause irreparable damage to relevant and important values.

Alternative D

Impacts from Vegetation

Impacts would be the same as those described under Alternative C.

Impacts from Visual Resources

Alternative D would best protect the scenic values by designating most of the potential ACEC as VRM Class I, with the remaining area designated as VRM Class II.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative A.

Impacts from Non-WSA Lands with Wilderness Characteristics

A portion of the Wild Horse Mesa (15,800 acres) non-WSA lands with wilderness characteristics lies within the 16,200-acre (RFO portion only) potential Lower Muddy Creek ACEC. Under Alternative D, protecting the non-WSA lands with wilderness characteristics within the Lower Muddy Creek ACEC would provide indirect protection for relevant and important values on 15,800 acres (98% of the potential ACEC). Specifics are described in the visual resources, travel management, minerals and energy, and lands and realty discussions in this section.

Impacts from Travel Management

Under Alternative D, 98% of the potential ACEC would be closed to motor vehicles. Consequently, Alternative D would best protect the relevant and important values from motorized vehicle use.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Impacts would be the same as those described under Alternative C.

Locatable Minerals

Impacts would be similar to those described under Alternative C. Additionally, under Alternative D, 15,800 acres (98% of the potential ACEC) would be proposed for withdrawal from mineral entry, precluding impacts to relevant and important values from mining exploration and development.

Impacts from Special Designations

Areas of Critical Environmental Concern

Impacts would be the same as those described under Alternative C.

Old Woman Front Potential ACEC

The Old Woman Front RNA Potential ACEC is located in eastern Sevier County, adjacent to the Old Woman Plateau RNA on the Fishlake National Forest. It encompasses 330 acres. Designating this area as an ACEC would complement the adjacent Forest Service RNA and provide a logical topographical boundary for the area. The relevant and important value of the area is its relict vegetation.

Impacts to the relevant and important value of this ACEC could occur from the following resource management programs:

- Fish and Wildlife
- Fire and Fuels Management
- Forest and Woodland Products
- Livestock Grazing
- Recreation
- Travel Management
- Lands and Realty
- Minerals and Energy
- Special Designations.

Other programs were determined to have little or no impact on the relevant and important values of this potential ACEC.

Alternative N: No Action

Impacts from Fish and Wildlife

Under Alternative N, vegetation treatments to meet terrestrial, aquatic, and riparian habitat objectives could pose risks to relict vegetation.

Impacts from Fire and Fuels Management

Alternative N would allow fire and fuels management and suppression activities that could crush or remove relict vegetation.

Impacts from Forest and Woodland Products

Alternative N would allow the harvest of forest and woodland products. However, due to the remote location and lack of access, the potential of harvest and the associated impacts to relict vegetation would both be low.

Impacts from Livestock Grazing

Under Alternative N, the Old Woman Front potential ACEC would be available for livestock grazing, so the relict vegetation could be grazed by domestic livestock. Management of livestock grazing in accordance with the *Fundamentals of Rangeland Health* and *Standards and Guidelines for Grazing Administration* would minimize impacts to the relict plant community, but these alternatives would pose some risks to the relevant and important value of relict vegetation.

Impacts from Recreation

Management in Alternative N could allow SRPs to be issued within the potential ACEC. There has been little-to-no demand for SRPs within this area. Prior to issuance of an SRP, site-specific analysis would be required and could provide mitigation for relict vegetation.

Impacts from Travel Management

Under Alternative N, the Old Woman Front is open to OHV use (including cross-country travel), which presents the greatest risk to relict vegetation from motorized vehicles.

Impacts from Lands and Realty

The potential ACEC is not recommended for withdrawal under Alternative N, which would allow mineral activities to be proposed within the area, possibly resulting in vegetation loss.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Under Alternative N, all of the potential ACEC would be open to oil and gas leasing subject to standard lease terms and conditions or with open to oil and gas leasing subject to moderate constraints (TL, CSU) restrictions. Among the alternatives, this proposed decision would pose the greatest risk to relevant and important relict vegetation values from surface disturbance caused by oil and gas exploration.

Locatable Minerals

Under Alternative N, exploration and development of locatable minerals could impact relevant and important relict vegetation values that are sensitive to surface disturbance. Locatable mineral exploration and development would be allowed under the General Mining Law. FLPMA requires BLM to regulate mining activities to prevent undue and unnecessary environmental degradation to resources.

Impacts from Special Designations

Areas of Critical Environmental Concern

Under Alternative N, no ACEC would be designated and no special management prescriptions would be implemented to specifically protect the relevant and important relict vegetation of the area. There would be a potential for impacts to relevant and important relict vegetation from resource decisions under this alternative.

Alternative A

Impacts from Fish and Wildlife

Impacts would be the same as those described under Alternative N.

Impacts from Fire and Fuels Management

Impacts would be the same as those described under Alternative N.

Impacts from Forest and Woodland Products

Impacts would be the same as those described under Alternative N.

Impacts from Livestock Grazing

Impacts would be the same as those described under Alternative N.

Impacts from Recreation

Impacts would be the same as those described under Alternative N.

Impacts from Travel Management

Under Alternative A, OHV use would be limited to designated routes within the potential ACEC, reducing the risks greatly over Alternative N. No routes are currently identified within this area. If routes were designated, this motorized activity could pose some risk to relevant and important relict vegetation by potential disturbance adjacent to these routes.

Impacts from Lands and Realty

Impacts would be the same as those described under Alternative N.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Impacts would be the same as those described under Alternative N.

Locatable Minerals

Impacts would be the same as those described under Alternative N.

Impacts from Special Designations

Areas of Critical Environmental Concern

Impacts would be the same as those described under Alternative N.

Proposed RMP

Impacts from Fish and Wildlife

Under the Proposed RMP, no wildlife habitat manipulation would be allowed, thus eliminating the risks to relevant and important relict vegetation from these types of treatments.

Impacts from Fire and Fuels Management

Under the Proposed RMP, requirements to use fire to accomplish the objectives of the area, use "light on the land" techniques (which minimize disturbance), and avoid the use of heavy equipment would best protect the relevant and important value of relict vegetation.

Impacts from Forest and Woodland Products

Under the Proposed RMP, the harvest of forest and woodland products would not be allowed, providing the best protection of the relevant and important value.

Impacts from Livestock Grazing

Under the Proposed RMP, the potential ACEC would be unavailable to grazing, eliminating the risks from livestock grazing to the relevant and important relict vegetation value.

Impacts from Recreation

Management actions under the Proposed RMP would preclude issuance of SRPs and would allow no impacts from this type of activity.

Impacts from Travel Management

Under the Proposed RMP, the potential ACEC would be closed to OHV use, eliminating any impacts to the relict vegetation from motorized use.

Impacts from Lands and Realty

Under the Proposed RMP, the potential ACEC is proposed to be withdrawn from mineral entry, precluding locatable mineral development, which would protect the relevant and important relict vegetation values from ground disturbance caused by mineral exploration and development. If the area is not withdrawn but an ACEC is designated, a plan of operations would be required that would address the effects on relevant and important values and other resource concerns.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Under the Proposed RMP, all of the potential ACEC would be open to leasing subject to major constraints (NSO), precluding any impacts to relevant and important values from oil and gas leasing.

Locatable Minerals

Under the Proposed RMP, within a designated ACEC, federal regulations (43 CFR 3809.11 (c)(3)) require that a plan of operation be submitted for any operation causing surface disturbance greater than casual use. This regulation would mitigate the impacts of mining exploration and development on the relict vegetation relevant and important values.

Impacts from Special Designations

Areas of Critical Environmental Concern

Under the Proposed RMP, Old Woman Front RNA ACEC would be designated on 330 acres of public land in eastern Sevier County, adjacent to the Old Woman Plateau RNA on the Fishlake National Forest. Management actions for the Old Woman Front RNA ACEC associated with the Proposed RMP (i.e., protection of relict vegetation, closing the ACEC to OHV use) described above, designating the ACEC would allow no uses that would cause irreparable damage to relevant and important values.

Alternative C

Impacts from Fish and Wildlife

Impacts would be the same as those described under the Proposed RMP.

Impacts from Fire and Fuels Management

Impacts would be the same as those described under the Proposed RMP.

Impacts from Forest and Woodland Products

Impacts would be the same as those described under the Proposed RMP.

Impacts from Livestock Grazing

Impacts would be the same as those described under the Proposed RMP.

Impacts from Recreation

Impacts would be the same as those described under the Proposed RMP.

Impacts from Travel Management

Impacts would be the same as those described under the Proposed RMP.

Impacts from Lands and Realty

Impacts would be the same as those described under the Proposed RMP.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Impacts would be the same as those described under the Proposed RMP.

Locatable Minerals

Impacts would be the same as those described under the Proposed RMP.

Impacts from Special Designations

Areas of Critical Environmental Concern

Impacts would be the same as those described under the Proposed RMP.

Alternative D

Impacts from Fish and Wildlife

Impacts would be the same as those described under the Proposed RMP.

Impacts from Fire and Fuels Management

Impacts would be the same as those described under the Proposed RMP.

Impacts from Forest and Woodland Products

Impacts would be the same as those described under the Proposed RMP.

Impacts from Livestock Grazing

Impacts would be the same as those described under the Proposed RMP.

Impacts from Recreation

Impacts would be the same as those described under the Proposed RMP.

Impacts from Travel Management

Impacts would be the same as those described under the Proposed RMP.

Impacts from Lands and Realty

Impacts would be the same as those described under the Proposed RMP.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Impacts would be the same as those described under the Proposed RMP.

Locatable Minerals

Impacts would be the same as those described under the Proposed RMP.

Impacts from Special Designations

Areas of Critical Environmental Concern

Impacts would be the same as those described under the Proposed RMP.

Parker Mountain Potential ACEC

The Parker Mountain Potential ACEC is located in western Wayne County on the Awapa Plateau. The area totals 107,900 acres. Relevant and important values are sagebrush-steppe habitat and SSS (Greater sage-grouse, Utah prairie dog, and pygmy rabbit).

Impacts to the relevant and important values of this ACEC could occur from the following resource management programs:

- Special Status Species
- Fish and Wildlife
- Travel Management
- Minerals and Energy
- Special Designations.

Other programs were determined to have little or no impact on the relevant and important values of this potential ACEC.

Alternative N: No Action

Impacts from Special Status Species

Under all alternatives, management actions such as prohibiting the destruction, adverse modification, or fragmentation of listed species habitat; maintaining the integrity of SSS habitat; and habitat improvements would benefit SSS. Proposed decisions to manage surface-disturbing activities within wildlife habitat could affect the sage-grouse, prairie dog, and pygmy rabbit values. Under Alternative N, the proposed decision to prohibit surface-disturbing activities from March 1 through July 15 near Greater sage-grouse leks and from April 1 through June 15 within sage-grouse brooding/nesting habitat would have beneficial impacts to sage-grouse, prairie dogs, and pygmy rabbits during those times of the year when the restrictions are in place.

Impacts from Fish and Wildlife

Under this alternative, restricting oil and gas activities in crucial pronghorn antelope habitat from December 1 through April 30 would have beneficial impacts to the Parker Mountain antelope herd and other wildlife inhabiting the area.

Impacts from Travel Management

OHV area designations within the potential ACEC, by alternative, are shown in Table 4-84. Under Alternative N, continuing to allow cross-country OHV use within 97% of the potential ACEC would adversely impact wildlife habitat due to ground disturbance and would also adversely impact wildlife itself due to harassment and displacement.

Table 4-84. OHV Area Designations within Parker Mountain Potential ACEC

		Alternative N (No Action)	Alternative A	Proposed RMP	Alternative C	Alternative D
Open	Acres	104,500	9,300	90	0	0
	% Area	97%	9%	<1%	0%	0%
Limited	Acres	3,400	98,600	107,810	107,900	107,900
	% Area	3%	91%	>99%	100%	100%
Closed	Acres	0	0	0	0	0
	% Area	0%	0%	0%	0%	0%

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Lands open to oil and gas leasing vary by alternative, as shown in Table 4-85. Under Alternative N, 23% of the potential ACEC would be open to leasing under standard terms and conditions. Among the alternatives, this proposed decision would pose the greatest risk to relevant and important relict vegetation values from surface disturbance caused by oil and gas exploration.

Table 4-85. Oil and Gas Leasing Stipulations within Parker Mountain Potential ACEC

		Alternative N (No Action)	Proposed RMP	Alternatives A, C and D
Standard Lease Terms	Acres	24,400	0	0
	% Area	23%	0%	0%
Controlled Surface Use or Timing Stipulations	Acres	77,400	104,200	107,900
	% Area	72%	97%	100%
No Surface Occupancy	Acres	6,100	3,700	0
	% Area	5%	3%	0%
Closed	Acres	0	0	0
	% Area	0%	0%	0%

Impacts from Special Designations

Areas of Critical Environmental Concern

Under Alternative N, no ACEC would be designated and no special management prescriptions would be implemented to specifically protect the relevant and important values of the area. There would be a potential for impacts to relevant and important values from travel and leasable mineral decisions under this alternative.

Alternative A

Impacts from Special Status Species

Under Alternative A, management actions such as prohibiting the destruction, adverse modification or fragmentation of listed species habitat, maintaining the integrity of SSS habitat, and habitat improvements would benefit SSS. Additional strategies (such as utilizing seasonal and spatial buffers for surface-disturbing activities and complying with raptor protection guidelines for powerline construction) would be employed to protect raptors and their habitat. These actions would minimize or eliminate impacts to the SSS relevant and important values. Under this alternative, the proposed decision to prohibit surface-disturbing activities within one-quarter mile of sage-grouse leks from March 15 through June 1 would have beneficial impacts to sage-grouse, prairie dogs, and pygmy rabbits during those times of the year when the restrictions are in place. However, this alternative has no surface disturbance restrictions for sage-grouse brooding/nesting habitat, thus posing a greater risk to relevant and important values than the other alternatives.

Impacts from Fish and Wildlife

Under Alternative A, having no surface disturbance restrictions for crucial pronghorn antelope habitat poses a greater risk to relevant and important values than the other alternatives.

Impacts from Travel Management

Under Alternative A, limiting vehicles to designated routes within 91% of the potential ACEC would greatly reduce these impacts. Continuing to allow cross-country OHV use within 9% of the potential ACEC could result in impacts to wildlife habitat due to ground disturbance, and wildlife itself due to harassment and displacement within that portion of the ACEC. The portion of the ACEC remaining open to OHVs is composed of large boulders, and the SSS of this potential ACEC have not been identified within this area. Portions of the open OHV area have been receiving continuous use from community-based recreational activities for many years.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Under Alternative A, oil and gas leasing throughout the potential ACEC would be subject to moderate constraints (timing limitation, CSU). This would protect the wildlife relevant and important values by restricting use during sensitive seasons.

Impacts from Special Designations

Areas of Critical Environmental Concern

Under Alternative A, no ACEC would be designated and no special management prescriptions would be implemented to specifically protect the relevant and important values of the area. Existing laws, rules, and regulations, as well as management decisions for travel and leasable minerals management, would adequately protect the relevant and important values of the potential ACEC.

Proposed RMP

Impacts from Special Status Species

Under the Proposed RMP, management actions such as prohibiting the destruction, adverse modification or fragmentation of listed species habitat, maintaining the integrity of SSS habitat, and habitat improvements would benefit SSS. Additional strategies (such as utilizing seasonal and spatial buffers for surface-disturbing activities and complying with raptor protection guidelines for powerline construction) would be employed to protect raptors and their habitat. These actions would minimize or eliminate impacts to the SSS relevant and important values.

The decision to limit surface-disturbing activities in sage-grouse habitat would benefit sage-grouse, prairie dogs, and pygmy rabbits during those times of the year when the restrictions are in place. Restrictions include managing the area as open to oil and gas leasing subject to major constraints (NSO) within ½ mile of Greater sage-grouse leks and prohibiting surface disturbing or otherwise disruptive activities within 2 miles of a lek from March 15 through July 15, and within sage-grouse winter habitat from December 15 through March 14 (see Appendix 11 for exceptions, waivers, and modifications).

Impacts from Fish and Wildlife

Restricting surface-disturbing activities in crucial pronghorn antelope habitat from May 15 through June 15 would provide additional benefits to sage-grouse, prairie dogs, and pygmy rabbits over Alternatives N and A.

Impacts from Travel Management

Limiting vehicles to designated routes within 99% of the potential ACEC under the Proposed RMP would greatly reduce the potential for impacts to relevant and important values associated with cross-country OHV use. A 90-acre managed open area would be located within the potential ACEC. The portion of the ACEC remaining open to OHVs is composed of large boulders, and the SSS of this potential ACEC have not been identified within this area. Extensive OHV use has been occurring within this area, and continuing that use would maintain the current condition, not resulting in any change to relevant and important values.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Under the Proposed RMP, oil and gas leasing on 97% of the potential ACEC would be subject to moderate constraints (timing limitation, CSU), and leasing on the remaining 3% would be subject to major constraints (NSO). This would protect the SSS relevant and important values by restricting use during sensitive seasons.

Impacts from Special Designations

Areas of Critical Environmental Concern

Under the Proposed RMP, the potential Parker Mountain ACEC would not be designated and no special management prescriptions would be implemented to specifically protect the relevant and important values of the area. Existing laws, rules, and regulations, as well as management decisions for SSS, fish and wildlife, travel, and leasable minerals management would adequately protect all the relevant and important values of the potential ACEC.

Alternative C

Impacts from Special Status Species

Impacts would be similar to those described under the Proposed RMP, however Alternative C has fewer restrictions on surface disturbing activities within Greater sage-grouse habitat.

Impacts from Fish and Wildlife

Impacts would be the same as those described under the Proposed RMP.

Impacts from Travel Management

The greatest beneficial impacts from travel management would be under Alternatives C and D, where no areas are open to cross-country motorized vehicle travel, thus eliminating the potential for impacts to relevant and important values.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Impacts would be the same as those described under Alternative A.

Impacts from Special Designations

Areas of Critical Environmental Concern

Under Alternative C, Parker Mountain ACEC would be designated on 107,900 acres of public land in Wayne County. In addition to management direction associated with Alternative C, described above, designating the ACEC would allow no uses that would cause irreparable damage to relevant and important values.

Alternative D

Impacts from Special Status Species

Impacts would be the same as those described under Alternative C.

Impacts from Fish and Wildlife

Impacts would be the same as those described under the Proposed RMP.

Impacts from Travel Management

Impacts would be the same as those described under Alternative C.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Impacts would be the same as those described under Alternative A.

Impacts from Special Designations

Areas of Critical Environmental Concern

Impacts would be the same as those described under Alternative C.

Quitchupah Potential ACEC

The Quitchupah Potential ACEC is located in eastern Sevier County along Quitchupah Creek and totals 180 acres. The potential ACEC boundary includes the riparian corridors and associated cultural resource sites and areas that have spiritual value to Native Americans. Relevant and important values are cultural resources and riparian values. Impacts to the relevant and important values of this ACEC could occur from the following resource management programs:

- Vegetation
- Cultural Resources
- Non-WSA Lands with Wilderness Characteristics
- Travel Management
- Special Designations.

Other programs were determined to have little or no impact on the relevant and important values of this potential ACEC.

Alternative N: No Action

Impacts from Vegetation

Under all alternatives, no surface-disturbing activities would be allowed within identified distances (which vary by alternative) from riparian areas unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the riparian relevant and important values from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment. Under Alternative N, no surface-disturbing activities would be allowed within 500 feet of riparian areas.

Impacts from Cultural Resources

Under Alternative N, management of cultural resources within the potential ACEC would be in accordance with existing cultural resource laws, which would protect this relevant and important value.

Impacts from Non-WSA Lands with Wilderness Characteristics

A portion of the Wildcat Knolls (30 acres) non-WSA lands with wilderness characteristics lies within the 180-acre potential Quitchupah ACEC. No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under Alternative N, resulting in no additional protection for relevant and important values.

Impacts from Travel Management

Proposed OHV area designations vary by alternative. Under Alternative N, Trough Hollow is closed to OHV use (54 acres, or 30% of the ACEC), which would protect the relevant and important values. For Quitchupah Creek, Link Canyon, and Water Hollow (121 acres, 67% of the ACEC), unrestricted OHV use would continue to pose a threat to cultural resources, Native American concerns, and riparian values.

Impacts from Special Designations

Wild and Scenic Rivers

Under Alternative N, managing Quitchupah Creek as an eligible WSR to protect its free-flowing nature and cultural outstandingly remarkable values would protect and enhance the cultural and riparian relevant and important values.

Areas of Critical Environmental Concern

Under Alternative N, no ACEC would be designated and no special management prescriptions would be implemented to specifically protect the relevant and important values of the area. There would be a potential for impacts to relevant and important values from travel management decisions under this alternative.

Alternative A

Impacts from Vegetation

Under Alternative A, no surface-disturbing activities would be allowed within 330 feet on each side of the stream or the 100-year floodplain, whichever is greater, unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the riparian relevant and important value from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment.

Impacts from Cultural Resources

Impacts would be the same as those described under Alternative N.

Impacts from Non-WSA Lands with Wilderness Characteristics

Impacts would be the same as those described under Alternative N.

Impacts from Travel Management

Under Alternative A, limiting vehicles to designated routes within the potential ACEC would protect the cultural resources, Native American concerns, and riparian values from disturbance.

Impacts from Special Designations

Wild and Scenic Rivers

There would be no additional protective management for Quitchupah Creek because it is not designated as a suitable WSR under Alternative A.

Areas of Critical Environmental Concern

Under Alternative A, no ACEC would be designated and no special management prescriptions would be implemented to specifically protect the relevant and important values of the area. Existing laws, rules, and regulations, as well as management decisions for this alternative, would adequately protect the relevant and important values of the potential ACEC.

Proposed RMP

Impacts from Vegetation

Under the Proposed RMP, no surface-disturbing activities would be allowed within 330 feet on each side of the stream or the 100-year floodplain, whichever is greater, unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the riparian relevant and important value from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment. Management to reduce surface-disturbing activities would also indirectly benefit the cultural relevant and important value of the potential Quitchupah ACEC.

Impacts from Cultural Resources

Impacts under the Proposed RMP would be the same as those described under Alternative N. Management of cultural resources within the potential ACEC would be in accordance with existing cultural resource laws, which would protect the cultural relevant and important value.

Impacts from Non-WSA Lands with Wilderness Characteristics

A portion of the Wildcat Knolls (30 acres) non-WSA lands with wilderness characteristics lies within the 180-acre potential Quitchupah ACEC. This non-WSA area would not be managed for wilderness characteristics within the Proposed RMP, resulting in no additional protection for relevant and important values.

Impacts from Travel Management

Impacts would be the same as those described under Alternative A. Under the Proposed RMP, limiting vehicles to designated routes within the potential ACEC would protect the cultural resources, Native American concerns, and riparian relevant and important values from disturbance.

Impacts from Special Designations

Wild and Scenic Rivers

There would be no additional protective management for Quitchupah Creek because it is not designated as a suitable WSR under the Proposed RMP.

Areas of Critical Environmental Concern

Under the Proposed RMP, the potential Quitchupah ACEC would not be designated and no special management prescriptions would be implemented to specifically protect the relevant and important values of the area. Existing laws, rules, and regulations, as well as management decisions within the Proposed RMP for riparian protection (no surface-disturbing activities within 330 feet on each side of the stream or the 100-year floodplain) and travel management (limiting vehicles to designated routes), would adequately protect the riparian and cultural relevant and important values of the potential ACEC.

Alternative C

Impacts from Vegetation

Under Alternative C, no surface-disturbing activities would be allowed within 660 feet from riparian areas unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the riparian relevant and important value from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment.

Impacts from Cultural Resources

Under Alternative C, special management for the ACEC would include an increase in public awareness of cultural resource values; an increase in law enforcement presence; and if necessary, installing fencing or other direct protection of important sites. These prescriptions would provide added protection for the cultural resources in the area.

Impacts from Non-WSA Lands with Wilderness Characteristics

Impacts would be the same as those described under Alternative N.

Impacts from Travel Management

Under Alternative C, closing portions of the area to OHV use (90 acres), with the remaining acres limited to designated routes, would protect the cultural resources, Native American concerns, and riparian values from disturbance.

Impacts from Special Designations

Wild and Scenic Rivers

Under Alternative C, designating Quitchupah Creek as a suitable WSR to protect its free-flowing nature and cultural outstandingly remarkable values would protect and enhance the cultural and riparian relevant and important values of the potential ACEC.

Areas of Critical Environmental Concern

Under Alternative C, designating the Quitchupah Archaeological ACEC to protect relevant and important archaeological, riparian, and Native American concerns would provide increased management emphasis for protecting these relevant and important values.

Alternative D

Impacts from Vegetation

Impacts would be the same as those described under Alternative C.

Impacts from Cultural Resources

Impacts would be similar to those described under Alternative C, except that special management under Alternative D would allow no fencing in non-WSA lands with wilderness characteristics, which may not protect the cultural resources as much as Alternative C.

Impacts from Non-WSA Lands with Wilderness Characteristics

A portion of the Wildcat Knolls (30 acres) non-WSA lands with wilderness characteristics lies within the 180-acre potential Quitchupah ACEC. Under Alternative D, protecting the non-WSA lands with wilderness characteristics within the Quitchupah ACEC would provide indirect protection for relevant and important values on 30 acres (17% of the potential ACEC). Specifics are described in the travel management discussion in this section.

Impacts from Travel Management

Impacts would be similar to those described under Alternative D, except that within Alternative D, 110 acres would be closed to OHV use. This alternative would provide the greatest level of protection for the relevant and important values of the potential ACEC.

Impacts from Special Designations

Wild and Scenic Rivers

Impacts would be the same as those described under Alternative C.

Areas of Critical Environmental Concern

Impacts would be the same as those described under Alternative C.

Rainbow Hills Potential ACEC

The Rainbow Hills Potential ACEC is located just east of Richfield and encompasses the colorful Arapien Shale outcropping. It totals 4,000 acres of public lands. Relevant and important values are mule deer, mule deer habitat, special status plants (Utah phacelia, Arapien stickleaf, Wards penstemon, rainbow rabbitbrush, Sigurd townsendia, and Glenwood milkvetch), and the naturally functioning ecosystem. Impacts to the relevant and important values of this ACEC could occur from the following resource management programs:

- Special Status Species
- Fish and Wildlife
- Fire and Fuels Management
- Travel Management
- Lands and Realty
- Minerals and Energy
- Special Designations.

Other programs were determined to have little or no impact on the relevant and important values of this potential ACEC.

Alternative N: No Action

Impacts from Special Status Species

Under all alternatives, management actions such as prohibiting the destruction, adverse modification, or fragmentation of listed species habitat; maintaining the integrity of SSS habitat; and habitat improvements would benefit SSS.

Impacts from Fish and Wildlife

Fish and wildlife management actions for the benefit of mule deer and their habitat would benefit those relevant and important values. These management prescriptions and seasonal and spatial restrictions on activities within the potential ACEC vary by alternative. Under Alternative N, a seasonal restriction on oil and gas exploration and development would be required in crucial and high-value mule deer habitat during sensitive seasons, such as fawning. These seasonal restrictions would provide greater protection for the mule deer and habitat relevant and important values than Alternative A, but less than under the Proposed RMP and Alternatives C and D.

Impacts from Fire and Fuels Management

Under Alternative N, unwanted wildfire in crucial mule deer habitats could result in impacts to crucial mule deer habitats. However, this alternative includes stabilization and rehabilitation efforts as needed for every wildland fire. Stabilization and rehabilitation efforts would benefit fish and wildlife species over the long term by decreasing erosion and restoring or improving habitat conditions following a fire event.

Impacts from Travel Management

Proposed OHV area designations, by alternative, are shown in Table 4-86. Under Alternative N, continuing to manage Rainbow Hills as an open OHV area could have adverse impacts on the relevant and important values because cross-country travel could disrupt wildlife use patterns and habitat. SSS would also continue to be impacted by vehicle travel, resulting in vegetation disturbance.

Table 4-86. OHV Area Designations within Rainbow Hills Potential ACEC

		Alternative N (No Action	Alternative A	Proposed RMP	Alternatives C and D
Open	**Acres**	4,000	3,800	700	0
	% Area	100%	95%	17%	0%
Limited	**Acres**	0	200	3,300	0
	% Area	0%	5%	83%	0%
Closed	**Acres**	0	0	0	4,000
	% Area	0%	0%	0%	100%

Impacts from Lands and Realty

Under Alternative N, proposed decisions for land tenure adjustments could maintain, increase, or decrease the land in federal ownership, having a beneficial or adverse impact on relevant and important values that would be determined in site-specific environmental analysis.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

The Rainbow Hills area is within the Covenant Oil Field, presently encompassed by authorized oil and gas leases, and the producing oil field in this RFD area overlaps this potential ACEC. Under Alternative N, exploration and development activities could affect relevant and important values due to surface and human-caused disturbances if they occur within the potential ACEC. The existing leases are a valid existing right and would have priority over the ACEC designation. The effects of any proposals on relevant and important values would be analyzed in site-specific analysis.

Locatable Minerals

Locatable mineral exploration and development would be allowed under the General Mining Law. FLPMA requires BLM to regulate mining activities to prevent undue and unnecessary environmental degradation to resources. SSS would be protected by law and BLM policy. This would minimize impacts of mining activities on relevant and important values of the potential ACEC. In addition, there is a low-to-moderate potential for occurrence of locatable mineral resources within the area. Currently, there is little interest in development. Impacts to relevant and important values from future exploration and development are expected to be low.

Impacts from Special Designations

Areas of Critical Environmental Concern

Under Alternative N, no ACEC would be designated and no special management prescriptions would be implemented to specifically protect the relevant and important values of the area. There would be a potential for impacts to relevant and important values from resource management decisions under this alternative.

Alternative A

Impacts from Special Status Species

Under Alternative A, management actions such as prohibiting the destruction, adverse modification, or fragmentation of listed species habitat; maintaining the integrity of SSS habitat; and habitat improvements would benefit SSS. Additional strategies (such as utilizing seasonal and spatial buffers for surface-disturbing activities and complying with raptor protection guidelines for powerline construction) would be employed to protect raptors and their habitat. These actions would minimize or eliminate impacts to the SSS relevant and important values.

Impacts from Fish and Wildlife

Under Alternative A, no seasonal or spatial restrictions of human presence or surface-disturbing activities would be required, which could result in greater impacts to mule deer and habitats during critical periods. This alternative would provide the least protection for the relevant and important values of mule deer and mule deer habitat.

Impacts from Fire and Fuels Management

Impacts would be the same as those described under Alternative N.

Impacts from Travel Management

Impacts would be similar to those described under Alternative N. Under Alternative A, 95% of the potential ACEC would continue to be open to cross-country OHV travel.

Impacts from Lands and Realty

Impacts would be the same as those described under Alternative N.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Impacts would be the same as those described under Alternative N.

Locatable Minerals

Impacts would be the same as those described under Alternative N.

Impacts from Special Designations

Areas of Critical Environmental Concern

Under Alternative A, no ACEC would be designated and no special management prescriptions would be implemented to specifically protect the relevant and important values of the area. There would be a potential for impacts to relevant and important values from resource management decisions under this alternative.

Proposed RMP

Impacts from Special Status Species

Under the Proposed RMP, management actions such as prohibiting the destruction, adverse modification, or fragmentation of listed species habitat; maintaining the integrity of SSS habitat; and habitat improvements would benefit SSS. Additional strategies (such as utilizing seasonal and spatial buffers for surface-disturbing activities and complying with raptor protection guidelines for powerline construction) would be employed to protect raptors and their habitat. These actions would minimize or eliminate impacts to the SSS relevant and important values and indirectly benefit the mule deer, mule deer habitat and naturally functioning ecosystem relevant and important values of the potential Rainbow Hills ACEC.

Impacts from Fish and Wildlife

Under the Proposed RMP, seasonal or spatial restriction of human presence or surface-disturbing activities could provide greater benefits to mule deer and habitats than Alternatives N and A, but less than Alternatives C and D. Prescriptive grazing would be used to favor forage production for big game high-priority and crucial winter range. OHV use would be limited to designated routes in mule deer crucial habitat, and seasonal restrictions of surface-disturbing activities would be required in crucial mule deer habitats. These management prescriptions would provide adequate protection of the mule deer and mule deer habitat relevant and important values.

Impacts from Fire and Fuels Management

Impacts would be similar to those described under Alternative N, except that the Proposed RMP would include stabilization efforts to sustain ecosystems, improve public health, improve safety, and to help communities protect infrastructure. Priority would be given to areas that pose a threat to life and property and areas with a potential for invasive weeds. Stabilization efforts would have the potential to benefit mule deer and the mule deer habitat relevant and important values in the long term.

Impacts from Travel Management

Under the Proposed RMP, open OHV use would occur on 700 acres within the potential Rainbow Hills ACEC. Boundaries of the open area have been adjusted to eliminate the potential for impacts to the SSS relevant and important value of the potential ACEC. Limiting OHVs to designated routes within the remainder of the area would reduce the impacts created by cross-country use. Vehicle travel on

designated routes could temporarily disrupt mule deer if these routes are near feeding and other occupied areas. Few routes have been identified for designation within this area, reducing the potential for impacts to all the relevant and important values.

Impacts from Lands and Realty

Under the Proposed RMP, proposed decisions for land tenure adjustments could maintain, increase, or decrease the land in federal ownership, having a beneficial or adverse impact on relevant and important values that would be determined in site-specific environmental analysis. Lands with SSS populations would likely not be offered for disposal, thus not impacting the SSS relevant and important value. Any sale of land within the potential ACEC would result in a loss of mule deer habitat in federal ownership and would be considered in site-specific analysis prior to offering the land for sale. Actual impacts to the mule deer and mule deer habitat relevant and important values would depend upon the acreage sold and how the land is used and developed after it leaves federal ownership.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

The Rainbow Hills area is within the Covenant Oil Field, presently encompassed by authorized oil and gas leases, and the producing oil field in this RFD area overlaps this potential ACEC. Under the Proposed RMP, exploration and development activities could affect relevant and important values due to surface and human-caused disturbances if they occur within the potential ACEC. The existing leases are a valid existing right and would have priority over the ACEC designation. The effects of any proposals on relevant and important values would be analyzed in site-specific analysis.

Locatable Minerals

Locatable mineral exploration and development would be allowed under the General Mining Law. FLPMA requires BLM to regulate mining activities to prevent undue and unnecessary environmental degradation to resources. SSS would be protected by law and BLM policy. This would minimize impacts of mining activities on all the relevant and important values of the potential ACEC. In addition, there is a low-to-moderate potential for occurrence of locatable mineral resources within the area. Currently, there is little interest in development. Impacts to relevant and important values from future exploration and development are expected to be low.

Impacts from Special Designations

Areas of Critical Environmental Concern

Under the Proposed RMP, the potential Rainbow Hills ACEC would not be designated and no special management prescriptions would be implemented to specifically protect the relevant and important values of the area. A small portion of the potential ACEC would remain open for OHV use, while providing protection to SSS relevant and important value. Existing laws, rules, and regulations, as well as management decisions within the Proposed RMP for fish and wildlife (crucial habitats), fire and fuels, travel, lands and realty and locatable minerals, would provide protection for the relevant and important values of the potential ACEC.

Alternative C

Impacts from Special Status Species

Impacts would be the same as those described under Alternative A.

Impacts from Fish and Wildlife

Under Alternative C, prescriptive grazing would be used to favor forage production for big game ranges. OHV use in mule deer crucial winter range would be limited to designated routes or closed. Seasonal restrictions would apply to surface-disturbing activities in crucial and high-value mule deer habitats.

Impacts from Fire and Fuels Management

Under Alternative C, the proposed decision to suppress unwanted wildfire in crucial mule deer habitats would benefit the mule deer by protecting the browse species that could otherwise be damaged by wildland fire and subsequently out-competed by undesirable species.

Impacts from Travel Management

Under Alternative C, closing the Rainbow Hills to OHV use would eliminate the potential impacts from motorized travel described above.

Impacts from Lands and Realty

Under Alternative C, proposed decisions for land tenure adjustments would benefit all relevant and important values by keeping the land in federal ownership and protecting it from development. In addition, proposed withdrawal from mineral entry would protect relevant and important values from surface disturbance caused by mineral exploration and development.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

The Rainbow Hills area is within the Covenant Oil Field, presently encompassed by authorized oil and gas leases, and the producing oil field in this RFD area overlaps this potential ACEC. Under Alternative C, management prescriptions would allow leasing with NSO to protect special status and endemic plants and the naturally functioning system relevant and important values. However, the existing leases are a valid existing right and would have priority over the ACEC designation, and those leases are not subject to NSO. Surface-disturbing activities from these existing leases could continue to pose risks to the relevant and important values. The effects of any proposals on relevant and important values would be analyzed in site-specific analysis.

Locatable Minerals

Under Alternative C, withdrawing the area from locatable mineral entry would protect relevant and important values from disturbances caused by mining activities.

Impacts from Special Designations

Areas of Critical Environmental Concern

Under Alternative C, Rainbow Hills ACEC would be designated on 4,000 acres of public land to protect and provide special management for the mule deer, mule deer habitat, special status plants, and the naturally functioning ecosystem relevant and important values. Under Alternative C, the proposed decision to designate a Rainbow Hills ACEC would (1) allow no uses that would cause irreparable damage to relevant and important values and (2) prescribe management to protect and enhance all relevant and important values.

Alternative D

Impacts from Special Status Species

Impacts would be the same as those described under Alternative A.

Impacts from Fish and Wildlife

Impacts would be similar to those described under Alternative C.

Impacts from Fire and Fuels Management

Impacts would be the same as those described under Alternative C.

Impacts from Travel Management

Impacts would be the same as those described under Alternative C.

Impacts from Lands and Realty

Impacts would be the same as those described under Alternative C.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Impacts would be the same as those described under Alternative C.

Locatable Minerals

Impacts would be the same as those described under Alternative C.

Impacts from Special Designations

Areas of Critical Environmental Concern

Impacts would be the same as those described under Alternative C.

Sevier Canyon Potential ACEC

The Sevier Canyon Potential ACEC encompasses the gorge bordering the Sevier River located between the towns of Marysvale and Sevier and totals 8,900 acres of public land. Relevant and important values are mule deer, mule deer habitat, SSS, and riparian areas.

Impacts to the relevant and important values of this ACEC could occur from the following resource management programs:

- Vegetation
- Special Status Species
- Fire and Fuels Management
- Travel Management
- Lands and Realty
- Special Designations.

Other programs were determined to have little or no impact on the relevant and important values of this potential ACEC.

Alternative N: No Action

Impacts from Vegetation

Under all alternatives, no surface-disturbing activities would be allowed within identified distances (which vary by alternative) from riparian areas unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance

the riparian area. This would protect the riparian relevant and important values from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment. Under Alternative N, no surface-disturbing activities would be allowed within 500 feet of riparian areas.

Impacts from Special Status Species

Under all alternatives, management actions such as prohibiting the destruction, adverse modification, or fragmentation of listed species habitat; maintaining the integrity of SSS habitat; and habitat improvements would benefit SSS.

Impacts from Fire and Fuels Management

Under Alternative N, unwanted wildfire in crucial mule deer habitats could result in impacts to crucial mule deer habitats. However, this alternative includes stabilization and rehabilitation efforts as needed for every wildland fire. Stabilization and rehabilitation efforts would benefit fish and wildlife species over the long term by decreasing erosion and restoring or improving habitat conditions following a fire event.

Impacts from Travel Management

Proposed OHV area designations, by alternative, are shown in Table 4-87. Under Alternative N, continuing to manage the area as open to cross-country OHV use could adversely impact mule deer, SSS, and riparian values by allowing disruption, crushing, and removal of vegetation and loss of habitat.

Table 4-87. OHV Area Designations within Sevier Canyon Potential ACEC

		Alternatives N and A	The Proposed RMP and Alternatives C and D
Open	Acres	8,900	0
	% Area	100%	0%
Limited	Acres	0	8,900
	% Area	0%	100%

Impacts from Lands and Realty

Under Alternative N, proposed decisions for land tenure adjustments could maintain, increase, or decrease the land in federal ownership, having a beneficial or adverse impact on relevant and important values that would be determined in site-specific environmental analysis.

Impacts from Special Designations

Areas of Critical Environmental Concern

Under Alternative N, no ACEC would be designated and no special management prescriptions would be implemented to specifically protect the relevant and important values of the area. There would be a potential for impacts to relevant and important values from resource management decisions under this alternative.

Alternative A

Impacts from Vegetation

Under Alternative A, no surface-disturbing activities would be allowed within 330 feet on each side of the stream, unless it could be shown that there are no practical alternatives, all long-term impacts could be

fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the riparian relevant and important value from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment.

Impacts from Special Status Species

Under Alternative A, management actions such as prohibiting the destruction, adverse modification, or fragmentation of listed species habitat; maintaining the integrity of SSS habitat; and habitat improvements would benefit SSS. Additional strategies (such as utilizing seasonal and spatial buffers for surface-disturbing activities and complying with raptor protection guidelines for powerline construction) would be employed to protect raptors and their habitat. These actions would minimize or eliminate impacts to the SSS relevant and important values.

Impacts from Fire and Fuels Management

Impacts would be the same as those described under Alternative N.

Impacts from Travel Management

Impacts would be the same as those described under Alternative N.

Impacts from Lands and Realty

Impacts would be the same as those described under Alternative N.

Impacts from Special Designations

Areas of Critical Environmental Concern

Impacts would be the same as those described under Alternative N.

Proposed RMP

Impacts from Vegetation

Impacts would be similar to those described under Alternative A, except within the Proposed RMP the buffer zone would be equal to the 100-year floodplain or 330 feet on either side from the centerline, whichever is greater. This would provide protection for the riparian relevant and important value of the potential Sevier Canyon ACEC

Impacts from Special Status Species

Management actions such as prohibiting the destruction, adverse modification, or fragmentation of listed species habitat; maintaining the integrity of SSS habitat; and habitat improvements would benefit SSS. Additional strategies (such as utilizing seasonal and spatial buffers for surface-disturbing activities and complying with raptor protection guidelines for powerline construction) would be employed to protect raptors and their habitat. These actions would minimize or eliminate impacts to the SSS relevant and important values.

Impacts from Fire and Fuels Management

Impacts would be similar to those described under Alternative N, except that the Proposed RMP would include stabilization efforts to sustain ecosystems, improve public health, improve safety, and help communities protect infrastructure. Priority would be given to areas that pose a threat to life and property and areas with a potential for invasive weeds. Stabilization efforts would have the potential to benefit mule deer and mule deer habitat relevant and important values in the long term.

Impacts from Travel Management

Under the Proposed RMP, limiting vehicles to designated routes would reduce adverse impacts to riparian areas and mule deer habitat and reduce the potential for harassment of mule deer and SSS, providing protection to all the relevant and important values of the potential ACEC. Impacts would be less than Alternatives N and A, and the same as Alternatives C and D.

Impacts from Lands and Realty

Under the Proposed RMP, proposed decisions for land tenure adjustments could maintain, increase, or decrease the land in federal ownership, having a beneficial or adverse impact on relevant and important values that would be determined in site-specific environmental analysis. Lands with riparian values and SSS populations would likely not be offered for disposal, thus not impacting the riparian and SSS relevant and important value. Any sale of land within the potential ACEC would result in a loss of mule deer habitat in federal ownership and would be considered in site-specific analysis prior to offering the land for sale. Actual impacts to the mule deer and mule deer habitat relevant and important values would depend upon the acreage sold and how the land is used and developed after it leaves federal ownership.

Impacts from Special Designations

Areas of Critical Environmental Concern

Under the Proposed RMP, the potential Sevier Canyon ACEC would not be designated and no special management prescriptions would be implemented to specifically protect the relevant and important values of the area. Existing laws, rules, and regulations, as well as management decisions for riparian protection zones, SSS, fire and fuels, and travel management under the Proposed RMP would provide protection for all the relevant and important values of the potential ACEC.

Alternative C

Impacts from Vegetation

Under Alternative C, no surface-disturbing activities would be allowed within 660 feet from riparian areas unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the riparian relevant and important value from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative A.

Impacts from Fire and Fuels Management

Under Alternative C, the proposed decision to suppress unwanted wildfire in crucial mule deer habitats would benefit the mule deer by protecting the browse species that could otherwise be damaged by wildland fire and subsequently out-competed by undesirable species.

Impacts from Travel Management

Impacts would be the same as those described under the Proposed RMP.

Impacts from Lands and Realty

Under Alternative C, proposed decisions for land tenure adjustments would benefit all relevant and important values by keeping the land in federal ownership and protecting it from development.

Impacts from Special Designations

Areas of Critical Environmental Concern

Under Alternative C, Sevier Canyon ACEC would be designated on 8,900 acres of public land to protect and provide special management for the mule deer and riparian relevant and important values. In addition to management direction associated with Alternative C described above, designating the ACEC would allow no uses that would cause irreparable damage to relevant and important values.

Alternative D

Impacts from Vegetation

Impacts would be the same as those described under Alternative C.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative A.

Impacts from Fire and Fuels Management

Impacts would be the same as those described under Alternative C.

Impacts from Travel Management

Impacts would be the same as those described under the Proposed RMP.

Impacts from Lands and Realty

Impacts would be the same as those described under Alternative C.

Impacts from Special Designations

Areas of Critical Environmental Concern

Impacts would be the same as those described under Alternative C.

Special Status Species Potential ACEC

The Special Status Species Potential ACEC encompasses documented locations of SSS identified in the evaluations of the various ACEC proposals. In total, this represents 15,100 acres of public lands. Relevant and important values are the following SSS: Winkler pincushion cactus, Wright fishhook cactus, last chance townsendia, Rabbit Valley gilia, Cronquist wild buckwheat, Creutzfeldt flower, Wards penstemon, Basalt milkvetch, Bicknell milkvetch, hole-in-the-rock prairie clover, Dana's milkvetch, Barneby milkvetch, Psoralea globemallow, Heil's beavertail, Jane's globemallow, flat-top wild buckwheat, Townsend's big eared bat, Allen's big eared bat, big free-tailed bat, fringed miotis, ferruginous hawk, bald eagle, burrowing owl, long-billed curlew, southwestern willow flycatcher, Greater sage-grouse, bluehead sucker, flannelmouth sucker, round-tail sucker, leatherside chub, and desert night lizard.

Impacts to the relevant and important values of this ACEC could occur from the following resource management programs:

- Vegetation
- Special Status Species
- Travel Management
- Lands and Realty
- Minerals and Energy

- Special Designations.

Other programs were determined to have little or no impact on the SSS of this potential ACEC.

Alternative N: No Action

Impacts from Vegetation

Under all alternatives, no surface-disturbing activities would be allowed within identified distances (which vary by alternative) from riparian areas unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the riparian relevant and important values from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment. Under Alternative N, no surface-disturbing activities would be allowed within 500 feet of riparian areas.

Impacts from Special Status Species

Under all alternatives, management actions such as prohibiting the destruction, adverse modification, or fragmentation of listed species habitat; maintaining the integrity of SSS habitat; and habitat improvements would benefit SSS.

Impacts from Travel Management

Proposed decisions for OHV open areas under Alternative N would pose the threat of irreparable damage to some of the special status plant species. If cross-country OHV use occurred within areas occupied by special status plants, they could be crushed, damaged, or destroyed.

Impacts from Lands and Realty

Under Alternative N, proposed decisions for land tenure adjustments could maintain, increase, or decrease the land in federal ownership, having a beneficial or adverse impact on relevant and important values that would be determined in site-specific environmental analysis.

Impacts from Minerals and Energy

Potential impacts of energy and mineral development to special status plant species include direct mortality from construction equipment and vehicles in occupied habitats. Also, habitat could be lost or modified by constructing well pads, pipelines, and associated facilities in occupied and suitable habitats and by disturbing habitat of the species' pollinators. Potential impacts of energy and mineral development to special status animal species include disturbance and harassment, which could interrupt/affect animals during critical activities (such as breeding or foraging), which could impact survival. SSS are scattered in various locations throughout the RFO, which could involve areas open to oil and gas, areas suitable for coal exploration and development, locatable minerals development, and mineral material disposal.

Leasable Minerals—Oil and Gas

SSS that are located in open areas or areas open to leasing subject to moderate constraints (timing limitation, CSU) are at greatest risk from oil and gas activities. Under Alternative N, 58% of the RFO would be open to leasing subject to standard terms and conditions and 19% would be open to leasing subject to moderate constraints (timing limitation, CSU). Lease notices informing potential lessees of restrictions and requirements that could be necessary for the protection of SSS would be attached to oil and gas leases offered in the State. The lease notices and accompanying consultation memoranda are found in Appendix 11. Application of the measures resulted in a "may affect, not likely to adversely affect" determination for the oil and gas leasing program.

Leasable Minerals—Coal

Any direct impacts of coal development on listed plant and animal species would be precluded by Coal Unsuitability Criterion 9, which states that, "federally designated habitat for listed threatened or endangered plant and animal species or species proposed for listing…shall be considered unsuitable."

Locatable Minerals

SSS could be adversely affected by surface-disturbing activities resulting from locatable minerals development. Closing or withdrawing areas from mineral operations would prevent impacts to SSS if they occur within those areas. Alternative N would recommend the fewest acres for withdrawal (169,480 acres). Locatable mineral exploration and development would be allowed under the General Mining Law. FLPMA requires BLM to regulate mining activities to prevent undue and unnecessary environmental degradation to resources. SSS would be protected by law and BLM policy. This would minimize impacts of mining activities on relevant and important values of the potential ACEC.

Salable Minerals

Existing areas of salable mineral disposals have already been substantially impacted. Therefore, it is likely that SSS do not occur in these areas. Authorization of new sites would be subject to NEPA review and consultation with USFWS, which would protect SSS.

Impacts from Special Designations

Areas of Critical Environmental Concern

Under Alternative N, no ACEC would be designated and no special management prescriptions would be implemented to specifically protect the relevant and important values of the area. There would be a potential for impacts to relevant and important values from resource management decisions under this alternative.

Alternative A

Impacts from Vegetation

Under Alternative A, no surface-disturbing activities would be allowed within 330 feet on each side of the stream, unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the riparian relevant and important value from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment.

Impacts from Special Status Species

Under Alternative A, management actions such as prohibiting the destruction, adverse modification, or fragmentation of listed species habitat; maintaining the integrity of SSS habitat; and habitat improvements would benefit SSS. Additional strategies (such as utilizing seasonal and spatial buffers for surface-disturbing activities and complying with raptor protection guidelines for powerline construction) would be employed to protect raptors and their habitat. These actions would minimize or eliminate impacts to the SSS relevant and important values.

Impacts from Travel Management

Impacts would be the same as those described under Alternative N.

Impacts from Lands and Realty

Impacts would be the same as those described under Alternative N.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Impacts would be similar to those described under Alternative N, except with fewer acres open to oil and gas leasing with standard stipulations. Under Alternative A, 40% of the RFO would be open to leasing subject to standard terms and conditions, and 39% would be open to leasing subject to moderate constraints (timing limitation, CSU).

Leasable Minerals—Coal

Impacts would be the same as those described under Alternative N.

Locatable Minerals

Impacts would be similar to those described under Alternative N, except that fewer acres (154,700) would be recommended for withdrawal from mineral entry.

Salable Minerals

Impacts would be the same as those described under Alternative N.

Impacts from Special Designations

Areas of Critical Environmental Concern

Impacts would be the same as those described under Alternative N.

Proposed RMP

Impacts from Vegetation

Impacts would be similar to those described under Alternative A, except within the Proposed RMP the buffer zone would be equal to the 100-year floodplain or 330 feet on either side from the centerline, whichever is greater. This protection of riparian resources would indirectly benefit any special status species located or dependant on those areas, and thus provide benefit to the SSS relevant and important value of the potential ACEC.

Impacts from Special Status Species

As in Alternative A, under the Proposed RMP, management actions such as prohibiting the destruction, adverse modification, or fragmentation of listed species habitat; maintaining the integrity of SSS habitat; and habitat improvements would benefit SSS. Additional strategies (such as utilizing seasonal and spatial buffers for surface-disturbing activities and complying with raptor protection guidelines for powerline construction) would be employed to protect raptors and their habitat. These actions would minimize or eliminate impacts to the SSS relevant and important values.

Impacts from Travel Management

Proposed decisions for OHV open areas under Alternatives N and A would pose the threat of irreparable damage to some of the special status plant species. The threat would be much reduced under the Proposed RMP where less than 1% of the lands managed by the RFO are designated as open. The boundaries of these small, managed open areas were developed to avoid SSS and thus protect this relevant and important value.

Impacts from Lands and Realty

Under the Proposed RMP, proposed decisions for land tenure adjustments could maintain, increase, or decrease the land in federal ownership, having a beneficial or adverse impact on relevant and important

values that would be determined in site-specific environmental analysis. Lands with SSS populations would likely not be offered for disposal, thus not impacting the SSS relevant and important value.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

The Proposed RMP would reduce the potential threat to SSS by having only 29% of the RFO open to leasing subject to standard terms and conditions. There would be 43% of the RFO open to leasing subject to moderate constraints (timing limitation, CSU), and the remaining 28% would be open to leasing subject to major constraints (NSO) or closed to leasing. Oil and gas leasing would be subject to species-specific buffers and seasonal, temporal and spatial restrictions identified within Appendix 11 and 14 to conserve habitat for SSS. These mitigation measures would provide protection to the SSS relevant and important values of the potential ACEC.

Leasable Minerals—Coal

Any direct impacts of coal development on listed plant and animal species would be precluded by Coal Unsuitability Criterion 9, which states that, "federally designated habitat for listed threatened or endangered plant and animal species or species proposed for listing…shall be considered unsuitable."

Locatable Minerals

Impacts would be similar to those described under Alternative N, except that additional acres (176,200) would be recommended for withdrawal from mineral entry over Alternatives N and A, providing additional protection to SSS species and the relevant and important values, if SSS are located within those areas.

Salable Minerals

Existing areas of salable mineral disposals have already been substantially impacted. Therefore, it is likely that SSS do not occur in these areas. Authorization of new sites would be subject to NEPA review and consultation with USFWS, which would protect SSS relevant and important values.

Impacts from Special Designations

Areas of Critical Environmental Concern

Under the Proposed RMP, the potential Special Status Species ACEC would not be designated and no special management prescriptions would be implemented to specifically protect the relevant and important values of the area. Resource decisions under the Proposed RMP have greatly reduced the potential for impacts to SSS. Existing laws, rules, and regulations, as well as the management decisions for SSS (maintaining the integrity of SSS habitats), travel, and minerals management (oil and gas leasing stipulations) would provide protection for the relevant and important SSS values of the potential ACEC.

Alternative C

Impacts from Vegetation

Under Alternative C, no surface-disturbing activities would be allowed within 660 feet from riparian areas unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the riparian relevant and important value from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative A.

Impacts from Travel Management

The potential for impacts to SSS from travel management was virtually eliminated under this alternative, which designated no open areas.

Impacts from Lands and Realty

Under Alternative C, proposed decisions for land tenure adjustments would benefit SSS by keeping the land in federal ownership and pursuing acquisition of non-federal lands from willing sellers where determined necessary for SSS. Also under this alternative, ROWs and other land use authorizations would be avoided if they would impact SSS or their habitats.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

In Alternative C, 2% less of the RFO would be open to leasing subject to standard terms and conditions, and 9% more of the area would be open to leasing subject to major constraints (NSO) or closed to leasing. This alternative would reduce risks to SSS compared to Alternatives N and A and the Proposed RMP.

Leasable Minerals—Coal

Impacts would be the same as those described under Alternative N.

Locatable Minerals

Impacts would be similar to those described under Alternative N, except that additional acres (331,100) would be recommended for withdrawal from mineral entry, providing additional protection to SSS.

Salable Minerals

Alternative C would provide additional protection for SSS by managing disposal subject to controlled surface use or timing limitations.

Impacts from Special Designations

Areas of Critical Environmental Concern

Under Alternative C, the Special Status Species ACEC would be designated (15,100 acres of public land) to protect and provide special management for SSS values within the potential ACEC by protecting them from ground-disturbing activities.

Alternative D

Impacts from Vegetation

Impacts would be the same as those described under Alternative C.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative A.

Impacts from Travel Management

Impacts would be the same as those described under Alternative C.

Impacts from Lands and Realty

Impacts would be the same as those described under Alternative C.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Potential for impacts would be least under this alternative, which would allow leasing with standard stipulations on only 14% of the RFO. The remainder of the area would be open to leasing subject to moderate constraints (TL, CSU), subject to major constraints (NSO), or closed to leasing, which would minimize or eliminate the potential for impacts to SSS.

Leasable Minerals—Coal

Impacts would be the same as those described under Alternative N.

Locatable Minerals

Alternative D would provide the greatest protection to SSS by recommending 903,900 acres for withdrawal from mineral entry.

Salable Minerals

Impacts would be the same as those described under Alternative C.

Impacts from Special Designations

Areas of Critical Environmental Concern

Impacts would be the same as those described under Alternative C.

Thousand Lakes Bench Potential ACEC

The Thousand Lakes Bench ACEC is located in southeastern Sevier County, south of Interstate 70 and east of Thousand Lake Mountain. It is 500 acres, located in several small areas. Relevant and important values are cultural resources, SSS (bald eagle, last chance townsendia, and Wright fishhook cactus), and riparian areas. Impacts to the relevant and important values of this ACEC could occur from the following resource management programs:

- Vegetation
- Cultural Resources
- Special Status Species
- Non-WSA Lands with Wilderness Characteristics
- Travel Management
- Special Designations.

Other programs were determined to have little or no impact on the relevant and important values of this potential ACEC.

Alternative N: No Action

Impacts from Vegetation

Under all alternatives, no surface-disturbing activities would be allowed within identified distances (which vary by alternative) from riparian areas unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the riparian relevant and important values from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and

vegetation treatment. Under Alternative N, no surface-disturbing activities would be allowed within 500 feet of riparian areas.

Impacts from Cultural Resources

Under Alternative N, management of cultural resources within the potential ACEC would be in accordance with existing cultural resource laws, which would protect this relevant and important value.

Impacts from Special Status Species

Under all alternatives, management actions such as prohibiting the destruction, adverse modification, or fragmentation of listed species habitat; maintaining the integrity of SSS habitat; and habitat improvements would benefit SSS.

Impacts from Non-WSA Lands with Wilderness Characteristics

A portion of the Jones Bench (40 acres) and Limestone Cliffs (390 acres) non-WSA lands with wilderness characteristics lie within the 500-acre potential Thousand Lakes Bench ACEC. No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under Alternative N, resulting in no additional protection for relevant and important values.

Impacts from Travel Management

OHV area designations, by alternative, are shown in Table 4-88. Under Alternative N, continuing to manage the area as open to cross-country OHV use would leave relevant and important values vulnerable to direct impacts from cross-country vehicle use.

Table 4-88. OHV Area Designations within Thousand Lakes Bench Potential ACEC

		Alternative N (No Action)	Alternatives A and the Proposed RMP	Alternatives C and D
Open	Acres	500	0	0
	% Area	100%	0%	0%
Limited	Acres	0	500	0
	% Area	0%	100%	0%
Closed	Acres	0	0	500
	% Area	0%	0%	100%

Impacts from Special Designations

Areas of Critical Environmental Concern

Under Alternative N, no ACEC would be designated and no special management prescriptions would be implemented to specifically protect the relevant and important values of the area. There would be a potential for impacts to relevant and important values from travel management decisions under this alternative.

Alternative A

Impacts from Vegetation

Under Alternative A, no surface-disturbing activities would be allowed within 330 feet on each side of the stream, unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the riparian relevant and important value from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment.

Impacts from Cultural Resources

Impacts would be the same as those described under Alternative N.

Impacts from Special Status Species

Under Alternative A, management actions such as prohibiting the destruction, adverse modification, or fragmentation of listed species habitat; maintaining the integrity of SSS habitat; and habitat improvements would benefit SSS. Additional strategies (such as utilizing seasonal and spatial buffers for surface-disturbing activities and complying with raptor protection guidelines for powerline construction) would be employed to protect raptors and their habitat. These actions would minimize or eliminate impacts to the SSS relevant and important values.

Impacts from Non-WSA Lands with Wilderness Characteristics

Impacts would be the same as those described under Alternative N.

Impacts from Travel Management

Under Alternative A, limiting vehicles to designated routes would reduce direct impacts to cultural, special status plant species, and riparian areas and would reduce the disturbance to bald eagles.

Impacts from Special Designations

Areas of Critical Environmental Concern

Under Alternative A, no ACEC would be designated and no special management prescriptions would be implemented to specifically protect the relevant and important values of the area. Existing laws, rules, and regulations, as well as other resource decisions for riparian protection zones and travel management under this alternative, would provide protection for the relevant and important values of the potential ACEC.

Proposed RMP

Impacts from Vegetation

Impacts would be similar to those described under Alternative A, except within the Proposed RMP the buffer zone would be equal to the 100-year floodplain or 330 feet on either side from the centerline, whichever is greater. This would provide protection for the riparian relevant and important value of the potential Thousand Lakes Bench ACEC

Impacts from Cultural Resources

Impacts would be the same as those described under Alternative N. Under the Proposed RMP, management of cultural resources within the potential ACEC would be in accordance with existing cultural resource laws, which would protect this relevant and important value.

Impacts from Special Status Species

Under the Proposed RMP, as in Alternative A, management actions such as prohibiting the destruction, adverse modification, or fragmentation of listed species habitat; maintaining the integrity of SSS habitat;

and habitat improvements would benefit SSS. Additional strategies (such as utilizing seasonal and spatial buffers for surface-disturbing activities and complying with raptor protection guidelines for powerline construction) would be employed to protect raptors and their habitat. These actions would minimize or eliminate impacts to the SSS relevant and important values.

Impacts from Non-WSA Lands with Wilderness Characteristics

Under the Proposed RMP, management prescriptions to maintain wilderness characteristics on 2,600 acres of the Jones Bench non-WSA lands with wilderness characteristics area would provide indirect protection for relevant and important values within the 50 acres located within the potential Thousand Lakes Bench ACEC. Management prescriptions would protect scenic values, reduce or eliminate surface disturbance, and retain public lands in federal ownership.

Impacts from Travel Management

Impacts would be the same as those described under Alternative A. Under the Proposed RMP, limiting vehicles to designated routes would reduce direct impacts to cultural, special status plant species, and riparian areas and would reduce the disturbance to bald eagles, thus providing protection for all relevant and important values of the potential ACEC.

Impacts from Special Designations

Areas of Critical Environmental Concern

Under the Proposed RMP, the Thousand Lakes Bench ACEC would not be designated and no special management prescriptions would be implemented to specifically protect the relevant and important values of the area. Existing laws, rules, and regulations, as well as other resource decisions for riparian protection zones (not allowing surface disturbing activities within the 100-year floodplain or 330 feet on either side from the centerline), SSS (maintaining the integrity of the SSS habitats), non-WSA lands with wilderness characteristics and travel management (limiting vehicles to designated routes) under the Proposed RMP, would provide protection for all the relevant and important values of the potential ACEC.

Alternative C

Impacts from Vegetation

Under Alternative C, no surface-disturbing activities would be allowed within 660 feet from riparian areas unless it could be shown that there are no practical alternatives, all long-term impacts could be fully mitigated, and the activity would benefit and enhance the riparian area. This would protect the riparian relevant and important value from surface-disturbing activities, but it could restrict potentially beneficial actions such as riparian area restoration and vegetation treatment.

Impacts from Cultural Resources

Under Alternative C, special management for the ACEC would include increasing public awareness of cultural resource values, increasing law enforcement presence, and, if necessary, installing fencing or other direct protection of important sites. These prescriptions would provide added protection for the cultural resources in the area.

Impacts from Special Status Species

In addition to the management strategies described under Alternative A, Alternative C prescribes increasing law enforcement presence in order to deter unauthorized collection of Wright fishhook cactus. This would provide added protection for this SSS within the potential ACEC.

Impacts from Non-WSA Lands with Wilderness Characteristics

Impacts would be the same as those described under Alternative N.

Impacts from Travel Management

Alternative C would close the potential ACEC to OHV use, thus eliminating the risks associated with motorized use and protecting the relevant and important values.

Impacts from Special Designations

Areas of Critical Environmental Concern

Under Alternative C, Thousand Lakes Bench ACEC would be designated (500 acres of public land) to protect and provide special management for the SSS, cultural resources, and riparian area values within the potential ACEC by protecting them from ground-disturbing activities.

Alternative D

Impacts from Vegetation

Impacts would be the same as those described under Alternative C.

Impacts from Cultural Resources

Special management under Alternative D would increase public awareness of cultural resource values and increase law enforcement presence, but no fencing would be allowed in non-WSA lands with wilderness characteristics, which may not protect the cultural resources as much as Alternative C.

Impacts from Special Status Species

Impacts would be the same as those described under Alternative C.

Impacts from Non-WSA Lands with Wilderness Characteristics

A portion of the Jones Bench (50 acres) and Limestone Cliffs (390 acres) non-WSA lands with wilderness characteristics lie within the 500-acre potential Thousand Lakes Bench ACEC. Under Alternative D, protecting the non-WSA lands with wilderness characteristics within the Thousand Lakes Bench ACEC would provide indirect protection for relevant and important values on 440 acres (88% of the potential ACEC). Specifics are described in the travel management discussion in this section.

Impacts from Travel Management

Impacts would be the same as those described under Alternative C.

Impacts from Special Designations

Areas of Critical Environmental Concern

Impacts would be the same as those described under Alternative C.

4.6 IMPACTS TO THE SOCIAL AND ECONOMIC ENVIRONMENT

This section is subdivided into three general areas:

- Impacts to social and economic conditions
- Impacts to environmental justice
- Impacts to public safety.

4.6.1 Social and Economic Conditions

This section discusses impacts to the social and economic conditions of the five-county socioeconomic study area from management actions contained within the various RMP alternatives and the Proposed RMP. Such impacts may result from specific individual management actions but also often reflect the collective effect of a number of actions under a particular alternative. Thus, this section presents impacts *from* the specific management actions of various resource programs and alternatives, in terms of impacts *to* the local economy, population, community services, public finance, and social customs and culture. Environmental justice is also addressed.

Potential *economic impacts* include changes in employment, income, business costs, and tax revenue to local, State, and Federal Government entities. Changes in employment and income can then cause indirect socioeconomic impacts, such as changes in population, which can lead to community impacts on housing, infrastructure, and other government services. These economic impacts may then produce *social impacts*, such as changes in community structure as new people move in to take new jobs. Changes in management of resources under the Proposed RMP and all alternatives can also have direct social impacts for residents and visitors, affecting livelihoods, lifestyles, attitudes, opinions, quality of life, and social structures.

The socioeconomic impact analysis and conclusions are based on BLM knowledge of resource uses in the socioeconomic study area; review of existing literature; and information provided by BLM specialists, local and State cooperating entities, and industry contacts. Impacts are quantified when possible and described in qualitative terms in the absence of reliable quantitative data. The analysis of socioeconomic impacts is intended to capture the most notable, overall socioeconomic impacts under each alternative, and cannot address all potential impacts.

Methods and Assumptions

This analysis was based on the following socioeconomic assumption:

- Baseline population growth in the planning area would follow projections made by the Governor of Utah's Office of Planning and Budget, Demographic and Economic Analysis Section, as shown in Table 4-89. (Deviations from these baseline projections due to management alternatives were noted, if any.)

Table 4-89. Population Projections in the Five-County Area

County	1990 Population	2000 Population	2010 Projected Population	2020 Projected Population	2030 Projected Population	Percent Change 2000–2030
Garfield*	3,980	4,763	4,955	5,973	6,747	42%

County	1990 Population	2000 Population	2010 Projected Population	2020 Projected Population	2030 Projected Population	Percent Change 2000–2030
Piute	1,277	1,436	1,503	1,790	1,797	25%
Sanpete	16,259	22,846	27,904	32,902	35,181	54%
Sevier	15,431	18,938	21,038	24,855	26,892	42%
Wayne	2,177	2,515	2,764	3,469	3,943	57%
Socioeconomic Study Area Totals	**39,124**	**50,498**	**58,164**	**68,989**	**74,560**	**48%**
Utah Totals	**1,722,850**	**2,246,553**	**2,833,337**	**3,486,218**	**4,086,319**	**82%**

Source: U.S. Census Bureau 2005, Utah Governor's Office of Planning and Budget 2005.
*Most of Garfield County's population lives outside the portion of the county within the RFO boundary.

Additional assumptions related to particular resource programs are important to the analysis of socioeconomic impacts. These are noted in the analyses below as needed.

Estimation of employment and income impacts required an economic model and a series of inputs specific to the RFO socioeconomic study area. Current uses of public lands and how these uses could change under each alternative provided quantitative input necessary for the economic impact analysis (e.g., number of gas wells, AUMs). Quantitative measures were only possible for some resource uses, specifically, livestock grazing, fuels management, recreation, and minerals (coal and fluid minerals). The estimates of annual employment and income generated in this study represent *only* the economic activity *directly attributable to activities on BLM-administered lands within the planning area*, based on the data and assumptions described in the methodology sections for each specific resource use. Economic activity that does not result from use of the RFO, such as jobs and income derived from livestock forage outside of BLM-administered lands, is not reported in this analysis.

It should be noted that for each resource use, future economic activity is dependent on a variety of factors beyond the control of BLM. For instance, the extent, pace, and timing of energy development activities depend on national and international energy demand and prices, production factors within each industry, and business strategies of operators. Because the pace of energy development in the planning area is unknown, a constant rate of production is assumed in this analysis for both coal production and oil and gas drilling and production. Likewise, utilization of livestock AUMs is assumed to be constant throughout the study period, based on the AUM allocations for each alternative. Actual economic impacts may vary if the rate of production in any of these industries changes over the study period.

Environmental Consequences

Impacts to socioeconomics would likely result from actions proposed under the following resource programs:

- Vegetation
- Visual Resources
- Fire and Fuels Management
- Non-WSA Lands with Wilderness Characteristics

- Forestry and Woodland Products
- Livestock Grazing
- Recreation
- Travel Management
- Lands and Realty
- Minerals and Energy
- Special Designations.

Other programs were determined to have little or no impact on socioeconomic conditions. There are no WSA decisions that would impact socioeconomic conditions.

Alternative N: No Action

Impacts from Vegetation

Vegetation treatments (including weed control and pest control) could provide some benefits to economic uses of BLM rangelands (e.g., livestock grazing and harvesting of forest and woodland products) and could result in inflows of dollars and provide contracts, income, and employment in the five-county study area. Insufficient information exists to quantify these benefits, but differences between the alternatives are discussed qualitatively.

Impacts from Visual Resources

VRM decisions represent a collection of restrictions placed on various resource programs, depending on the class of scenery identified through visual resource inventories. The VRM class itself does not represent a restriction; restrictions result from management decisions for other resources that potentially affect scenic qualities. The socioeconomic impacts of management decisions result from those separate resource decisions for the specific acreages within each VRM class designation. As with other resources, these decisions vary by alternative.

Impacts on socioeconomics from VRM decisions would most likely result from actions proposed under vegetation, fire and fuels management, non-WSA lands with wilderness characteristics, livestock grazing, recreation, travel management, lands and realty, minerals and energy, and special designations.

It must be re-emphasized that restrictions within these *other* resources provide the tools that BLM can use in managing scenic resources.

Alternative N contains no acreage in VRM Class I and is thus potentially the least restrictive of the alternatives. This is somewhat misleading in that Alternative N does not include WSA acreage as VRM Class I, as do the Proposed RMP and Alternatives A, C, and D. By policy, all WSAs must be managed under IMP. The prescriptions of IMP, which bar almost all forms of development or surface-disturbing activities, have the same net impact as managing as VRM Class I. The impacts to socioeconomics would be similar to the impacts discussed for other resources in this alternative that directly affect scenic quality. The lower degree of protection of scenic resources under this alternative has the potential to adversely impact those businesses and individuals whose livelihood depends, all or in part, on local recreation spending by those visitors who place a high value on the scenic qualities of the planning area.

Impacts from Fire and Fuels Management

Wildland fires pose significant threats to human life and property. Personal, social, and economic losses from wildland fires, particularly in the Wildland Urban Interface, can be substantial. Strains on the resources of communities to fight fires can also be considerable. The wildland fire risk management and fire-fighting policies and programs of the alternatives would reduce risks and eventual losses. Fire

suppression activities within the RFO are managed by the Richfield Interagency Fire Center (RIFC), which is located in central Utah. Its jurisdictional boundaries cover seven counties, including Piute, Sanpete, Sevier, and Wayne counties. RIFC employed local personnel that participated on 468 on-and-off district assignments in 2005 (RIFC 2005). In the same year, BLM administered two exclusive use contracts for a Type-3 helicopter and one air-attack/reconnaissance fixed-wing aircraft, both stationed at Richfield airport. BLM also acquired two Single Engine Airtankers on Call When Needed contracts that were stationed at Fillmore and Nephi (ibid). From 1996 through 2005, 336,392 acres burned on BLM's Richfield and Fillmore Field offices combined, with an annual average of 82 fires burning an annual average of 33,639 acres (ibid). In the Richfield area, the cost of fire suppression ranges from $169 for fires one-quarter of an acre to 10 acres down to $34 per acre for fires larger than 1,000 acres (BLM RFO 2008). Assuming the entire cost for fire suppression stays within the socioeconomic study area, the average fire is about 410 acres, and cost of fire suppression for a fire between 300 acres and 1,000 acres remains at $47 per acre over the life of the plan, a rough estimate of the annual revenue contributed to the local economy from fire suppression activities can be estimated. This results in about $1,580,000 annually to the local economy over the life of the plan. The estimate overstates the total economic contribution to the local economy because it uses the average annual acreage for fires in both the Richfield and Fillmore Field Offices. Post-fire stabilization and rehabilitation costs could result in inflows of dollars to the socioeconomic study area and provide opportunities for contracts, income, and employment in the study area. However, the resulting economic activity from suppression activities cannot be quantified or differentiated between the alternatives due to unpredictability in the locations and intensities of wildfire and rehabilitation requirements.

For fuels treatments, however, it is possible to quantify expenditures and their impact on the local economy. In the Richfield Fire District (of which the BLM is a partner), approximately 10,000 acres per year have been mechanically treated in recent years. In the Richfield area, the cost of this treatment is about $100 per acre, with about 70% of that amount going to a local contractor (conversation between Bill Stevens, Moab Field Office and Stan Anderson, United States Forest Service (USFS), Richfield Interagency Fire Center, June 29, 2007). This has resulted in at least $70,000 per year being put into the local economy from mechanical fuels treatments. Contracts for such services are awarded competitively, so there is no assurance that such contracts will continue to be locally awarded. This analysis, however, makes that assumption.

The extent of socioeconomic impacts of fire suppression cannot be projected given the unpredictability in the locations and intensities of wildfire. However, under Alternative N and based on assumptions discussed above, on average, approximately 33,639 acres are suppressed annually, contributing an estimated $1,580,000 to the local economy. Alternative N is not specific as to acres treated per year, as decisions are made on a case-by-case basis. In recent years, as noted above, approximately 10,000 acres have been treated annually, contributing an estimated $700,000 to the local economy.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under this alternative, resulting in no additional impacts on socioeconomics.

Impacts from Forestry and Woodland Products

Insufficient information on current harvests and harvest potential (e.g., areas suitable for timber harvest) is available to quantify the economic value, jobs, and income produced from forest and woodland products on public lands.

Commercial timber harvesting on public land in the RFO has historically been very limited. At present, commercial harvests are prohibited east of Capitol Reef National Park, including the Henry Mountains, which have commercially harvestable species. Public lands are also used for commercial seed and live

plant collection. These operations are believed to support jobs and income in the socioeconomic study area. Non-commercial harvests of Christmas trees, posts and poles, and fuelwood also have economic, social, and cultural significance to local residents. Under this alternative, forest and woodland product harvests, and any resulting jobs and significance to local custom and culture, would continue to follow recent patterns.

Impacts from Livestock Grazing

Grazing decisions were analyzed as follows. First, historical grazing use (licensed AUMs per year) within the RFO was obtained from BLM records. This data is provided in Chapter 3. Next, the average values of AUMs in Utah for cattle and sheep were estimated, which is also discussed in Chapter 3.

Grazing use of public lands would continue to provide income and jobs in the socioeconomic study area. According to a statewide social survey conducted by Utah State University (USU) in 2007, provided in Appendix 17, a minority group of the residents in each of the five counties within the socioeconomic study area relies on permitted use of BLM lands for a portion of their household income. The highest percentage of respondents that indicated some portion of their household income comes from permit-based grazing activities on BLM lands was for Garfield County (20% of respondents), and the lowest percentage was for Sanpete County (4.5% of respondents).

Levels of grazing would likely continue at recent levels. Use of public lands in the Richfield planning area averaged 50,827 cattle AUMs and 9,756 sheep AUMs over the 10-year period from 1994 to 2003. This base period includes a number of good, average, and low grazing years, ranging from 76,591 total AUMs in 2001 to 39,921 total AUMs in 2003. Based on this average use and average Utah production values per AUM, the annual value of livestock production from AUMs on public lands is $2,319,000. This represents 1.5% of the $154,189,000 annual value of cash receipts from livestock and livestock products for the entire five-county socioeconomic study area.

Ranching on public lands also represents an important aspect of the local culture. A decrease in the number of acres available for grazing has the potential to adversely impact the lifestyle of ranchers in the community. Losses in grazing opportunities could result in lost income and consequently a decline in social well-being for affected ranchers and their families. The inability for the ranchers to continue with traditional practices could potentially impact the overall character and way of life for residents of the planning area. Reductions in ranching-based income could make it difficult for families to earn a living on ranching alone. Family members may have to get second jobs or work off of the ranch to bring in additional income. If ranchers are unable to continue operations, impacts to local communities could include loss of business activity or the businesses themselves and a decline in population if individuals have to relocate to earn a living.

Impacts from Recreation

Recreational activity has important socioeconomic value, both in terms of satisfaction provided to local residents and visitors and the economic activity generated for the local economy. Recreation-related expenditures in the socioeconomic study area by visitors from other regions infuse new money into the local economy. These expenditures and re-spending of this money between sectors within the local economy generate income and support jobs.

Data on recreational use for various activities on public lands managed by the RFO is available from RMIS (Recreation Management Information System), a database maintained by the BLM. RMIS data for fiscal years (FYs) 2001–2004 is summarized in Chapter 3. Unfortunately, neither RMIS nor any other source provides data on the proportion of visitor days accounted for by individuals living outside the socioeconomic study area. According to a state-commissioned study by D.K. Shifflet & Associates (2006), non-resident travel within Utah has consistently been about double that of resident tourism,

measured in terms of visitor days. In 2005, for example, the study found that non-resident visitor days accounted for 66.2% of statewide visitor days. Not all visitors, of course, are recreation visitors (e.g., business, visiting family), nor are all recreation visitors using BLM lands. Given the lack of other data sources, this figure seems reasonable for the purpose of estimating visitor spending in that non-resident visitors typically spend more per day than resident visitors. It is likely that this figure (66.2%) is too high for some activities and too low for others[1].

Data on expenditures per local (defined as Utah resident) and non-local visitor day was obtained from the above source. That study estimated non-resident visitor spending statewide at $103 per day, with resident spending statewide averaging $61 per day. A large part of the difference was due to spending on lodging, implying that many resident visitors are not on overnight trips, which may be representative of the planning area.

Due to insufficient data, economic differences between the alternatives could not be quantified. Differences are discussed qualitatively.

The economic contributions of recreation to the local economy were quantified for Alternative N based on current levels of recreation. Recreational visitor days on BLM land were based on a 4-year average of RMIS data for fiscal years 2001 to 2004. Total visitor days were 374,594. Non-local visitor days were assumed to be 66.2% of that figure. Total expenditures in the socioeconomic study area by non-local recreationists using public lands were estimated to be $25,542,000 in 2005 dollars. Spending by Utah residents (not all of whom would reside in the planning area) added another $7,723,000, based on the assumptions outlined above.

Factors outside the planning area are expected to increase demand for recreational activities within the RFO. While there have been reductions in visitation numbers over recent years, these contradict regional and national recreation trends and are expected to reverse and grow over time (BLM 2003b). For instance, increasing populations along the Wasatch Front and the western slope of Colorado are expected to result in increasing demand for recreational activities throughout Utah, and likely for the RFO. No projections for increased visitation to RFO lands over the planning period are available, but expenditures, income, and jobs related to recreation on public lands are likely to increase over the planning period. According to the 2007 USU social survey, with summary results provided in Appendix 17, the percentage of survey respondents who operate or work at a business linked to recreation or tourism activities influenced by public lands and resources was highest in Wayne County (51.3%), Garfield County (40.3%), and Piute County (33.3%) and substantially lower in Sevier County (8.1%) and Sanpete County (5.3%).

Recreation management decisions could impact the lifestyle or quality of life of individuals utilizing or living near public lands. In particular, decisions that alter the classification of certain areas within the RFO relative to different types of recreation experiences (e.g., primitive, motorized, developed sites) would affect the availability and quality of different recreational experiences. This could impact individuals with expectations or desires that differ from those provided by the management decisions. Under Alternative N, existing conflicts caused by differing visitor expectations and desires for certain types of recreational experiences could continue and intensify with time. This alternative does not address these types of conflicts.

[1] *A comprehensive visitation use study conducted for the Moab, Utah, BLM Field Office found that 18% of recreation visitors were locals, defined as living within 50 miles of the interview site (USFS 2007).*

Impacts from Travel Management

Demand for OHV recreation use is likely to increase over time in the RFO, although these increases are not quantifiable with existing data. The employment and income impacts of current levels of OHV recreation use are captured in the recreation analysis.

Under this alternative, most of the RFO (1,636,400 acres, 77%) would be open to OHV recreation use without limitation. This would provide for high quantity and quality of experience for users seeking an unconfined OHV recreation use experience, but it would impact the quality of experience for other recreationists interested in non-motorized recreational environments. There could also be adverse impacts to that segment of OHV users for whom a key part of their recreation experience is interaction with and enjoyment of scenic values. Unrestricted OHV use has the potential to detract from such values, and thus the desired experience of this subset of users.

Impacts from Lands and Realty

Land tenure adjustments potentially impact local government finances. Disposal of public lands to private ownership could reduce Payments In Lieu of Taxes (PILT) by the Federal Government to local government, but would also result in payments of property taxes to local government by the new private property owner(s). Land exchange to other governments could also impact PILT payments. Acquisition of private land by the BLM would reduce property taxes paid to local government but would increase PILT payments. The net impact on local government finances cannot be determined without detailed information on the specific property or properties in question and the tax rates and other financial figures for the particular local government(s).

Disposal of public lands to local governments or private parties could further the economic development of communities within the RFO or serve other important social purposes such as provision of special recreational areas. Neither the increased economic activity nor other social benefits or costs can be predicted within the framework of the RMP process because these impacts depend on the location and timing of the specific land tenure adjustments. Analysis of these impacts would properly be conducted at the implementation level.

ROWs, leases, and permits produce revenue for the BLM and play important roles in the economy within, and in some cases beyond, the RFO. Management direction established in the RMP might support or deny ROWs, leases, and permits, but actual impacts would depend on the specific location and proposal. The socioeconomic impacts cannot be estimated at the RMP level.

Under Alternative N, only a few parcels (280 acres) identified in current land use plans that have not sold to date would be available for FLPMA Section 203 sales. Thus, impacts from sales under this program would be low, resulting in foregone opportunities to bolster local economic development. However, other land tenure adjustments (exchanges, R&PP patents, etc.) could still be approved. These other land tenure adjustments are considered on a case-by-case basis and are hard to predict.

Under Alternative N, certain areas are managed as avoidance or exclusion areas for ROWs, including utility corridors and communication sites:

- WSAs
- ACECs
- Eligible WSR corridors
- Areas closed to oil and gas leasing
- Areas open to oil and gas leasing subject to major constraints (NSO).

To the extent that areas are excluded for ROWs, there could be an adverse impact on certain types of economic development that require such use of the public lands. To the extent that such areas are avoidance areas, additional costs could be imposed on those entities desiring ROWs. Without knowing the quantity of ROWs foregone by this alternative, the economic impacts cannot be quantified.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

The economic impact of oil and gas operations was analyzed in two phases:

- Phase I: Exploration and Development
- Phase II: Production.

Phase I considered how many exploratory and development wells would be drilled in the RFO under each alternative and how many would be completed as producing wells. The average number of wells expected to be drilled under each alternative for four sub-areas of the RFO was taken from the RFD scenario (Appendix 12) prepared by BLM for this Proposed RMP. A number of additional assumptions were necessary for this analysis, which are summarized in Table 4-90.

Table 4-90. Assumptions for Oil and Gas Economic Impact Analysis

Item		RFD Area			Source
		1 and 2	3	4	
Number of Wells Drilled per Year on BLM		3	0	11	RFD Table 1 figures as adjusted for land ownership, divided by 15-year period
Type of Well	Oil	50%	0	100%	RFD, and Utah BLM state office minerals staff professional judgment
	Conventional Gas	50%	0	0	
	Coalbed Methane	0	100%	0	
Average Success Rates, All Well Types		12.50%	12.50%	50%	Utah BLM state office mineral staff professional judgment—12.5% is the national average for exploration; a higher rate is expected in Area 4 due to known field development
Average Cost of Drilling and Completion to Producing Well	Oil	$2.25 million			Utah BLM state office mineral staff, based on costs in recent "Paying Well Determination" submittals for wells similar to those expected in the RFO
	Conventional Gas	$2.25 million			
	Coalbed Methane	$1 million			
Average Cost of Drilling and Completion to Dry Hole	Oil	$1.35 million			Utah BLM state office mineral staff professional judgment
	Conventional Gas	$1.35 million			
	Coalbed Methane	$0.6 million			

Item		RFD Area			Source
		1 and 2	3	4	
Average Annual Operating Costs	Oil	$60,000			Utah BLM state office mineral staff, based on costs in recent "Paying Well Determination" submittals for wells similar to those expected in the RFO
Average Annual Operating Costs	Conventional Gas	$60,000			
	Coalbed Methane	$30,000			

With regard to exploration and development, the assumptions in Table 4-90 result in figures of $22 million for annual oil and gas well drilling and completion costs. (RFD Area 3 includes 49 projected wells located in a play on the eastern side of Sanpete and Sevier counties. Because RFD Area 3 has the least amount of BLM or other public land, any fluid mineral development precluded on public lands would likely be made up on other lands. This is why no wells are projected on BLM lands in RFD Area 3.) Not all of these expenditures benefit the socioeconomic study area because the oil and gas industry within the socioeconomic study area is quite small due to the low level of development in this area. It was therefore assumed for this analysis that all of the drilling operators would originate from areas outside of the study area. Investment in oil and gas drilling would have less of an economic impact on the area because most of the direct expenditures (labor costs in particular) would not be recirculated back into the local economy. However, some businesses that would support drilling activities indirectly are located in the study area; for instance, hotels and restaurants used by the drilling crews. A study of impacts of gas drilling in Carbon and Emery counties concluded that only 40% of the direct expenditures for new wells would be local. This result was used for oil and gas exploration and development activities in the RFO.

Historically, the RFO has seen limited oil and gas exploration and very little development. Interest has recently increased with the advent of a producing well field. The RFD predicts that approximately 207 wells (including coalbed methane wells) would be drilled on BLM lands in the planning area over the 15-year planning period. This is an average rate of about 14 wells per year.

Using recent data from the State of Utah for the Uintah Basin and Uintah County and making two additional assumptions: 1) oil and gas development and production in the RFO socioeconomic study area are similar to the Uintah Basin and Uintah County and 2) average wages for oil and gas employment and average wages for all other employment in the RFO socioeconomic study area are also similar to the Uintah Basin and Uintah County, it is possible to project the numbers of jobs likely to be created by drilling and completing a well in the RFO. A study done by the Utah Energy Office (UEO 2004) estimated the number of jobs in all sectors that drilling and completing a single well in the Uintah Basin would create at 14.8 jobs. The study cautions that the projection is for a single well; additional wells would likely use most of these same employees. Table 4-91 confirms this likelihood. As of 2006, for example (the most recent year for which complete data is available), the number of employees per well in Uintah County was 0.67. For the 5 years prior to this, the ratio varied from a low of 0.463 to the 0.67 reported for 2006. Similarly, one can compute the number of additional employees in the industry in Uintah County in relationship to the number of new wells drilled. Although the numbers vary somewhat from year to year, Table 4-91 shows that the highest multiple was in 2006 at 1.267 additional employees per new producing well brought online; the average for all positive years was 1.03. This data is not inconsistent with the UEO study, which estimated that most of the new job creation would be in the services, retail, and wholesale trades, with only 1.7 of the 14.8 projected new jobs in the oil and gas industry. The recent lower numbers are likely due to economies of scale resulting from large-scale

development. If all wells, including dry holes, were included, the ratio would be less. These results should not be surprising, in that the industry can quickly relocate crews to new drilling platforms as wells are drilled and completed. Once completed, it takes relatively few employees to oversee the operation of numerous wells and associated infrastructure.

As stated above, the UEO study projected the additional non-oil and gas jobs that a single well would create at 13.1 jobs (14.8 total minus 1.7 specific to oil and gas). The information from UEO assumes that employment for 14.8 individuals is required for one well, and it would require 14.8 employees for each well thereafter. The numbers used from the report do not take into account that one employee may be able to complete the tasks required for numerous wells, for example, a clerk in a retail store could accommodate the needs of several oil and gas employees. In other words, one cannot assume a strictly multiplicative increase for additional wells. This is borne out by recent studies done for the State of Utah by the University of Utah[2]. This study estimated total employment in the Uintah Basin at 19,852 employees. Of this total, the study estimates that 9,835 jobs were directly or indirectly related to the oil and gas industry, with direct employment of 3,959. This suggests a multiplier effect of 2.48 (9835/3959). Although a significant economic impact in itself, this is considerably less than the multiplier suggested by the earlier UEO study. Once again, this can be explained by the fact that the UEO study estimated the impact of a single well, which misses the economies of scale that result from large-scale development of the type currently experienced in the Uintah Basin. Given this recent State-provided data, subsequent analysis in this section will assume 1.26 direct and 2.48 indirect jobs created per additional well drilled over the life of the plan (2006 data). Wage data are derived from the same study: average wages for employees in the oil and gas industry in the Uintah Basin were $65,482 in 2006 and average wages for all other jobs were $30,607. Combining this data, the analysis that follows will assume that each new well could create 3.74 jobs, generating $158,412 in wage income annually. These numbers are based on producing wells, rather than wells drilled. Given that not all exploration efforts are successful, the actual economic impact per well drilled, based on the RFD, will probably be lower.

Table 4-91. Producing Wells and Employment in the Oil and Gas Industry—Uintah County, 2001–2006

Year	Producing Wells[1]	Employment[2]	Oil and Gas Employment per Well	Change in Well Numbers	Change in Employment	Ratio of Change in Employment to Change in Wells
2001	2,650	1,376	0.519			
2002	2,867	1,327	0.463	217	-49	-0.226
2003	3,119	1,564	0.501	252	237	0.940
2004	3,471	1,830	0.527	352	266	0.756
2005	3,875	2,254	0.582	404	424	1.050
2006	4,452	2,985	0.670	577	731	1.267

[1]Source: State of Utah, Division of Oil, Gas and Mining

[2]Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (as reported in *The Structure and Economic Impact of Utah's Oil and Gas Exploration and Production Industry Phase I—The Uinta Basin*, Bureau of Economic and Business Research, University of Utah, November, 2007)

[2] *Source:* The Structure and Economic Impact of Utah's Oil and Gas Exploration and Production Industry Phase I—The Uinta Basin, *Bureau of Economic and Business Research, University of Utah, November, 2007)*

Under Alternative N, 459,700 acres would be closed to oil and gas leasing and 22,600 acres would be open to leasing subject to major constraints (NSO). Remaining lands would be open to leasing subject to standard terms and conditions (1,236,500 acres) or subject to moderate constraints (timing limitation, CSU) (409,200 acres). The closures and stipulations on leasing under this alternative are not expected to significantly affect oil and gas development. Nearly 80% of the wells projected in the RFD are located in a play along the west side of the planning area where public lands are either open to leasing subject to standard terms and conditions or open to leasing subject to moderate constraints (timing limitation, CSU).

Leasable Minerals—Coal

Coal mining has historically been an important activity within the RFO, and it is expected that this importance would continue in the future. Currently, only one mine is operating within the planning area. This is the Southern Utah Fuel Company (SUFCO) mine in eastern Sevier County, which is Utah's single most productive coal mine. This operation includes both Forest Service and BLM land. While its current activity focuses on Forest Service land, BLM land is also part of the "logical mining unit" and, therefore, the production of this mine is included in its entirety for this socioeconomic impact analysis. As described in Chapter 2, the coal region of which the SUFCO mine is a part includes 73,952 acres of federal mineral estate.

Economic contributions associated with coal mining within the RFO were analyzed by first considering coal resources and annual production for Sevier County, which is the location of the SUFCO mine. This information was obtained from the Utah Geological Survey (2004). A 5-year production average, as summarized in Table 4-92, was used as a basis for future potential coal production during the study period. Coal resources in the vicinity of the SUFCO mine are adequate to support this level of production (Tabet 2003, pages 1 and 41).

Table 4-92. Total Annual Coal Production for Sevier County, Utah

Year	Production (Thousand Short Tons)
2000	5,906
2001	7,001
2002	7,600
2003	7,126
2004[a]	7,400
5-yr Average	**7,007**

[a] Forecast
Source: UGS 2004.

The value of coal production within the RFO was then estimated by applying an annual price forecast per short ton to the 5-year average annual production rate listed in Table 4-92. The average forecasted price was obtained from the U.S. Energy Information Administration (2004) and represents the average forecasted 9-month price for the U.S. over the period 2004–2018.

Coal mining under current conditions has a notable impact on the local economy, supporting nearly 700 full- and part-time jobs and nearly $22 million in labor income within the socioeconomic study area. Based on management actions under Alternative N, current trends in coal production are expected to continue and, therefore, the future economic role of coal mining in the socioeconomic study area would be much the same as today. Adequate accessible coal resources exist to allow continuation of current

production trends (Tabet 2003). No policies are in place that would substantially affect those trends. Rather, significant decreases or increases in coal production depend on energy prices and the relative economics of coal production in the RFO versus other regions. New coal development also depends strongly on site-specific environmental review.

In addition to the SUFCO mining area on the Wasatch Plateau, the Richfield RFD scenario identifies an additional area in the Henry Mountains with potential for subsurface coal leasing, totaling 107,414 acres of federal mineral estate. Although no current production exists, development of this resource has the potential to generate beneficial socioeconomic impacts under Alternative N. Under this alternative, the entire acreage would be available for lease, with the exception of WSA acreage.

Locatable and Salable Minerals

Insufficient information was available to quantify the generation of employment and income from mining of locatable minerals (e.g., gypsum and metals such as gold) or salable minerals such as sand and gravel, stone, humate, and clay. Differences between the alternatives with regard to these mining activities are discussed qualitatively. According to the assumptions of this study, significant development of oil shale, tar sands, or geothermal resources is considered unlikely within the planning horizon.

Under Alternative N, present locatable mineral and mineral material exploration and development would be able to continue, with levels of activity depending on market conditions. Opportunities for individuals and companies to prospect for and develop mineral deposits would be maintained, thus preserving a culture of historic and social significance in the region.

Impacts from Special Designations

For the RFO, areas of special designation include ACECs and WSRs. As is the case with VRM and non-WSA lands with wilderness characteristics, ACECs and WSRs are not resource management tools in themselves but rely on prescriptions for other resource programs to achieve management goals. Alternative N continues to designate four existing ACECs totaling 14,780 acres and manages in a protective manner 12 eligible WSR segments totaling 135 miles.

Wild and Scenic Rivers

Alternative N requires BLM to manage all eligible streams to protect their outstandingly remarkable values, free-flowing nature, and tentative classification to the degree that BLM has authority (e.g., BLM lands within the corridor) and within the parameters of decisions made in the previous planning documents, until such time as suitability determinations are made. Under Alternative N, no suitability determinations would be made for any of the eligible WSR segments. However, the 12 eligible river segments would continue to be managed in a manner that would not impair their WSR suitability. Social and economic impacts resulting from this management action would be similar to current conditions.

Areas of Critical Environmental Concern

The management prescriptions for the four existing ACECs are described in detail in Chapter 2. The prescriptions include restrictions on oil and gas leasing (either closed to leasing or subject to major constraints), restrictions on grazing in three of the ACECs, managed as closed to OHV use, closed to surface coal leasing, and recommended for mineral withdrawal. For those people in the planning area who could use these restricted resources for their economic or social benefit, this alternative is potentially harmful. No additional impact to these interests would occur, however, because these areas are currently managed to protect the relevant and important values that led to their creation. For those who derive social well-being from protection of these relevant and important values, this alternative provides such benefits. For all groups, however, socioeconomic impacts likely would be minor, given the small amount of acreage currently managed as ACECs.

Alternative A

Impacts from Vegetation

Additional vegetation treatments and weed control efforts, relative to Alternative N, would likely result in additional inflows of dollars to the RFO, increasing the opportunities for contracts, income, and employment. These additional treatments could also improve forage, economically benefiting ranchers who graze cattle on public lands. This alternative would provide the greatest economic stimulus in the form of contracts, income, and employment related to vegetation treatments, weed control, and pest control. This stimulus would be very small relative to the total socioeconomic study area economy.

Impacts from Visual Resources

Alternative A designates 446,900 acres as VRM Class I. This acreage is within WSAs and is managed in Alternative N to protect scenic quality under IMP. The impacts to socioeconomics would be similar to the impacts from Alternative N decisions for those resources that directly impact scenic quality.

Impacts from Fire and Fuels Management

Assuming the 73,600 acres for treatment annually in this alternative are funded and implemented, the number of fires could diminish relative to Alternatives N, C, or D, thus lowering the economic activity resulting from fire suppression. The economic activity resulting from hazardous fuel reduction treatments could be greater than in Alternatives N, C, or D, because Alternative A could provide the greatest economic stimulus in the form of contracts, income, and employment related to hazardous fuel reduction treatments. If, for example, the full acreage was mechanically treated and past contract patterns continued, over $5,000,000 could be contributed to the local economy. Such a scenario, however, is unlikely in that funding on such a scale is improbable. The acreage maximum may be achieved through a variety of means, including naturally caused wildfires or selective thinning (often done by out-of-area contractors). It is also unclear whether local contractors would have the capacity to operate on such a scale, even for the type of work now being done. A more realistic scenario would be continued treatment at the 10,000-acre annual level, resulting in economic impacts similar to Alternative N. Any increase up to the prescribed maximum could generate more economic benefits to the local economy.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under this alternative, resulting in no additional impacts on socioeconomics.

Impacts from Forestry and Woodland Products

Opening additional areas to commercial harvesting in this alternative potentially could result in additional income and jobs relative to Alternative N; however, the value of timber available for harvest in this alternative is unknown. No impacts are anticipated to commercial seed and live plant harvesting and non-commercial harvesting of woodland products relative to Alternative N. This alternative could provide the greatest economic stimulus in the form of contracts, income, and employment related to forestry and woodland products. The level of economic stimulus would be very small relative to the total socioeconomic study area economy.

Impacts from Livestock Grazing

Impacts would be the same as described under Alternative N, except that an additional 1,079 AUMs of forage on 36,950 acres would be available for livestock grazing. These additional AUMs would show little overall change from the above-listed figures, representing an increase of only 1% over Alternative N. Construction of necessary range improvements to facilitate the use of the additional forage could inject a small amount of permittee-provided investment into the economy. The limited scope of those improvements and the extended timeframes required for initial investments to be recouped from the small

amount of added production would delay real, derived economic benefit to the ranchers for possibly decades. The small reduction in available AUMs for wildlife would possibly reduce the allotted hunting permits or opportunity in each respective locale for the species concerned (e.g., mule deer, elk, bison, or a combination thereof). This reduction in permit numbers or hunting opportunity would reduce proportionally the income in local service industries, guide businesses, and Utah Division of Wildlife Resources (UDWR) coffers. The impact would be greatest on bison-related activities with 249 AUMs becoming unavailable in Dry Lakes and Sawmill Basin allotments for bison, reducing their yearlong herd number by 20 animals. This alternative would also forfeit the investment the UDWR or their agents have made in purchasing these AUMs from livestock permit holders for the purpose of increasing available forage for wildlife.

Impacts from Recreation

The emphasis of Alternative A on motorized access, commodity production, and resource extraction impacts recreation. Management actions under this alternative could reduce the quality of the recreational experience for certain recreationists, particularly those seeking primitive and semi-primitive experiences. However, these impacts would be relatively localized, as the commercial potential for operations with substantial impacts on recreation (e.g., mining or timber harvesting) is relatively limited in the planning area and resource development would likely be focused in small areas.

Recreation management impacts to lifestyle and quality of life under Alternative A could be locally significant (for particular sites) or significant in aggregate, depending on the degree to which the decisions match individual and societal preferences for the wide array of recreational uses provided by public lands. Under Alternative A, a number of SRMAs would be established. Plans for these areas include both recreational facility development and primitive area preservation (the latter most notably for the Dirty Devil/Robbers Roost area), and emphasizes motorized and non-motorized uses to greater or lesser degrees. Recreationists seeking a wide variety of experiences would be able to find areas in which their preferences are emphasized. This could improve the quality of experiences and resulting quality of life of many recreationists and reduce conflicts relative to Alternative N.

Establishment and management of the Dirty Devil/Robbers Roost SRMA to provide for recreational experiences complementary with the remote and scenic nature and other resource values of this area would help protect the quality of those experiences and could draw additional visitors to the area from outside the socioeconomic study area. (The Dirty Devil Canyon area provides the type of primitive and semi-primitive recreation experiences and opportunities for challenge and solitude that are in substantial demand across the West.) This could result in increased economic activity in communities near the Dirty Devil area. To the extent that visitors rely on local permittees as guides or outfitters, these activities would directly benefit businesses and individuals engaged in such activities.

Impacts from Travel Management

Management actions under this alternative would provide some areas open to OHV recreation use without limitation (449,000 acres), but they would place limitations on OHV recreation use in a very large portion of the RFO (1,679,000 acres). This would reduce the quantity and quality of experience for OHV recreation users seeking unconfined experiences. However, the lessened impacts on the scenery that could result from these restrictions could enhance the recreational experience of those OHV users whose primary interest is in enjoying the scenic qualities of the area. All areas closed to OHV recreation use in Alternative N (214,000 acres) would be limited under Alternative A, providing new areas for OHV recreation use. Designation of a large number of open play areas could draw additional riders from outside the RFO, resulting in economic stimulus to the socioeconomic study area. However, increased concentration of OHV recreation users in certain locations could cause increased conflicts among OHV recreation users or decreased quality of experience. The quality of experience for other recreationists

seeking non-motorized recreational environments would be enhanced in those areas being placed in a limited category under this alternative.

Under Alternative A, 252 fewer miles of routes are open for motorized travel than under Alternative N; use on 249 additional miles is restricted; and 3 additional miles are closed. The effects on the local economy from these differences should be minor to negligible, given that 4,312 miles of routes would remain open to motorized travel.

Impacts from Lands and Realty

Under Alternative A, approximately 13,400 acres of BLM-administered public lands would be considered for FLPMA Section 203 sales, much more than would be considered under Alternative N. Benefits to community development and taxes, assuming more land disposals, would likely be greater than under Alternative N. An offset to this economic gain to local counties would be a loss of PILT payments for any lands so disposed. A potential adverse social impact to disposals under this alternative would be the probable loss of public access to these parcels, although many of them are small, isolated parcels surrounded by non-federal land where access is already restricted. Opportunities for other land tenure adjustments would be the same as for Alternative N.

Under Alternative A, certain areas are managed as avoidance or exclusion areas for ROWs, including utility corridors:

- WSAs
- Areas closed to oil and gas leasing.

The acreage avoided or excluded is less than for all other alternatives. To the extent that areas are excluded for ROWs, there could be an adverse impact on certain types of economic development that require such access. To the extent that such areas are avoidance areas, additional costs could be imposed on those entities desiring ROW access. Without knowing the quantity of ROWs foregone by this alternative, the economic impacts cannot be quantified, but they would likely be less than under any other alternative.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Impacts from management actions under this alternative are similar to Alternative N. Under Alternative A, 446,900 acres would be closed to oil and gas leasing. Remaining lands would be open to leasing subject to standard terms and conditions (860,600 acres) or subject to moderate constraints (timing limitation, CSU) (820,500 acres). The closures and stipulations on leasing under this alternative are not expected to significantly alter oil and gas development, for the same reasons noted for Alternative N.

Leasable Minerals—Coal

Under Alternative A, the coal unsuitability reports prepared for this Proposed RMP would be used to determine lands acceptable for further consideration for leasing (Appendix 8). The acreage of lands available for leasing is considerably less in this alternative (and the Proposed RMP and Alternatives C and D) than in Alternative N. However, the unsuitability analysis indicates 41,842 acres in the Henry Mountains coal field are suitable for underground mining (82% of the total underground minable coal resource acreage) and 14,719 acres are suitable for surface mining (40% of the corresponding acreage). In the Emery and Wasatch fields, 31,838 acres are suitable for underground mining (100%) and no acres are suitable for surface mining (0% of the 683 total acres of surface-minable coal resource). In short, the unsuitability analyses indicate ample acreages are available for continued and perhaps expanded coal mining operations. This alternative includes policies and decisions that are designed to support extractive

industries such as coal mining. However, as in Alternative N, whether additional coal development takes place depends upon energy prices, the relative economics of coal production in the RFO versus other regions, and site-specific environmental review.

Locatable and Salable Minerals

Impacts would be similar to those described under Alternative N, except that this alternative would have fewer restrictions on disposal of mineral materials. The lessened restrictions could provide additional opportunities for those wishing to obtain salable minerals.

Impacts from Special Designations

Wild and Scenic Rivers

Alternative A would not recommend rivers within the RFO for WSR designation. This would create some opportunities for businesses and individuals currently impacted by managing the eligible river segments to protect their outstandingly remarkable values, free-flowing nature, and tentative classification under Alternative N. Individuals whose social well-being is enhanced by the values currently protected could be adversely impacted by this alternative, relative to Alternative N.

Areas of Critical Environmental Concern

Alternative A would designate no ACECs. This would create some opportunities for businesses and individuals currently impacted by restrictions on the existing ACECs under Alternative N. Individuals whose social well-being is enhanced by the relevant and important values currently protected could be adversely impacted by this alternative, relative to Alternative N. For all groups, however, socioeconomic impacts likely would be minor, given the small amount of acreage currently designated as ACECs.

Proposed RMP

Impacts from Vegetation

Impacts from management actions under the Proposed RMP are the same as for Alternative A. In addition, management actions under the Proposed RMP would apply an economic threshold to the application of pest control programs. This would probably result in fewer pest control programs and reduce attendant contracts, income, and employment opportunities compared to Alternative A.

Impacts from Visual Resources

The Proposed RMP designates the same acreage as VRM Class I as Alternative A, but adds 249,800 acres as VRM Class II. The VRM Class II will pose additional costs on certain activities, particularly minerals. A corresponding socio-economic benefit, however, will be a net increase in scenic vistas. Our recreation data indicates “driving for pleasure” as the number one recreation activity in the RFO. The socioeconomic impacts of resource decisions to protect scenic qualities of VRM Class II areas are described further in those specific resource discussions. Resource decisions most affected by the Proposed RMP include non-WSA lands with wilderness characteristics, recreation, minerals, and travel management.

Impacts from Fire and Fuels Management

Impacts would be the same as described under Alternative A.

Impacts from Non-WSA Lands with Wilderness Characteristics

The Proposed RMP manages 78,600 acres of non-WSA lands with wilderness characteristics to maintain the qualities of naturalness, outstanding opportunities for primitive and unconfined recreation or solitude, and supplemental values where present. As with visual resources, this resource itself is not a management tool but relies on restrictions of other resource programs to achieve its management goals. The tools used

include restrictions on forestry and woodland products, travel management, minerals and energy, lands and realty, and recreation. These restrictions are identical to the restrictions discussed for each of the resources described throughout chapter 4 under the Proposed RMP, and the socioeconomic impacts are similar for each of these resources so restricted. The socioeconomic impacts of these restrictions resulting from managing 78,600 acres to protect wilderness characteristics are summarized in this section under the specific resource decision, and in the following paragraph.

To help protect, preserve and maintain wilderness characteristics in the 78,600 acres being so managed, the Proposed RMP does the following. Motorized use would be limited to 25.6 miles of designated routes, typically in areas now open to cross-country OHV travel. This decision will benefit those desiring a more non-motorized recreation experience, but negatively impact those OHV recreationists who desire a less restricted environment. All acres of those being protected would be subject to major constraints (NSO). To the extent that such mineral resources are present in the affected areas, there is a potential negative impact to those individuals and firms relying on minerals extraction for their livelihood. All 78,600 acres would be rights-of-way avoidance areas, which could have minor impacts on those needing such provisions. All 78,600 acres would remain in federal ownership, although this would likely have only minor to minimal impacts on future land exchanges or disposals. Woodland harvest would be prohibited, which could cause some harm to those currently relying on the area for such harvest. All 78,600 acres would be in VRM Class II. This has the potential to increase costs for certain types of activities such as minerals; given that all 78,600 acres would be NSO category, however, the additional restrictions posed by VRM class would not likely have an additional negative impact. As with visual resources, the restrictions on development under this alternative have the greatest potential to restrict economic opportunities for those whose livelihood depends, all or in part, on the restricted activities. This would be particularly true in the case of minerals development and motorized recreation. Conversely, those whose livelihood or sense of well-being depends on values associated with wilderness characteristics and primitive recreation would perceive a benefit under the Proposed RMP. This alternative could benefit those businesses that rely on those recreation visitors who value wilderness qualities.

It is not possible to predict whether the potential socioeconomic gains described above would outweigh the socioeconomic losses that could result from this alternative. Managing lands for wilderness characteristics may have some benefits to the local economy above and beyond benefits to individual users of these areas. There is extensive literature that argues that protecting lands as wilderness provides local, regional, and even national economic benefits. Other research suggests that areas with protected lands are more likely to attract higher income individuals, as well as businesses, who value the types of recreation activities provided by protected areas. Still other research argues that certain types of high-dollar recreation, such as hunting, are enhanced by wilderness protection. While most of these studies have focused on the benefits accruing from *designated* wilderness, it is possible that the same arguments may be applicable to non-WSA lands with wilderness characteristics[3].

Impacts from Forestry and Woodland Products

Impacts would be similar to those described under Alternative A, with two exceptions. The 78,600 acres of non-WSA lands with wilderness characteristics being managed to protect, preserve and maintain wilderness characteristics in the Proposed RMP would be closed to woodland harvest, live plant and seed collection (except as allowed under the Healthy Lands Initiative), potentially affecting those individuals relying in whole or part on these areas for this activity. Live plant and seed collection would only be allowed in areas outside WSAs, the 78,600 acres of non-WSA lands with wilderness characteristics being carried forward and suitable WSR corridors.

[3] A good source with an extensive literature review is: "The net economic value of wilderness", Bowker, J.M.; Harvard, J.E.,III; Bergstrom, John C.; Cordell, H. Ken; English, Donald B.K.; Loomis, John B., in *The Multiple Values of Wilderness*, pp. 161–181, USFS, Southern Research Station, 2005.

Impacts from Livestock Grazing

Impacts would be the same as described under Alternative N.

Impacts from Recreation

Management actions under the Proposed RMP attempt to balance needs to provide for production of food, fiber, and minerals with needs to protect, restore, and enhance natural values and to provide quality recreational experiences. There could be less impact on recreation due to resource development and extraction than under Alternative A and, therefore, less impact on the lifestyle and quality of life of recreational users of the lands managed by the RFO.

Management of the SRMAs and non-WSA lands with wilderness characteristics would emphasize primitive and semi-primitive experiences to a greater extent than under Alternative A (most notably for the Capitol Reef Gateway and Henry Mountains). This could draw additional visitors to the area from outside the planning area who seek such experiences, potentially resulting in increased economic activity in communities near these SRMAs.

Establishing an SRMA for motorized recreation in the Factory Butte area could provide positive social benefits to those individuals and groups who value a less restricted recreation experience. The management actions in the SRMA, especially facilities and marked trails, have the potential to attract additional visitation to the area, possibly benefiting local businesses. Conversely, those businesses and individuals who cater to non-motorized recreation may be negatively impacted by this decision.

Impacts from Travel Management

The Proposed RMP has 9,890 acres open to OHV use and fewer designated open play areas than Alternative A. This could result in a diminished recreational experience for some OHV users and may impact the area's ability to draw new OHV users, and their associated expenditures, to the socioeconomic study area. OHV use on the majority of the RFO (1,908,210 acres) would be limited to designated routes. The total acreage closed to OHV use in the Proposed RMP (209,900 acres) is also similar to that for Alternative N (214,000 acres). While OHV users seeking unconfined experiences would be impacted, overall OHV recreation use would likely be similar to Alternative N. Thus the economic impact of OHV recreation use under this alternative would likely be similar to the impact under Alternative N.

Under the Proposed RMP, designated routes total 4,277 miles, 538 miles of which have timing or vehicle size restrictions. The reduced miles available for motorized travel could adversely impact some local users, to the degree that their perceived needs for access are affected. For those desiring a more backcountry recreation experience, the reduced miles of available motorized routes could be perceived as beneficial. The overall differences between Alternatives N and A might not be substantial enough to produce other than minor socioeconomic impacts.

Impacts from Lands and Realty

The types of impacts from lands and realty under the Proposed RMP are similar to those for Alternative A. In addition, the Proposed RMP considers withdrawing a relatively small amount of land from mineral entry; however, this would have minor impacts on mineral development relative to Alternative N, given current rates of such development and directional drilling technologies. Significant acreages would also not be available for ROWs for wind and solar energy exploration and development, but this would likely have minimal impacts as the potential for such uses is small.

Under the Proposed RMP, certain areas would be avoidance or exclusion areas for ROWs, including utility corridors and communication sites:

- WSAs
- ACECs
- Suitable WSR corridors
- Areas closed to oil and gas leasing
- Areas open to oil and gas leasing subject to major constraints (NSO).

The *categories* of these ROW avoidance/exclusion areas are similar to Alternative N, except for the inclusion in the Proposed RMP of 78,600 acres of non-WSA lands with wilderness characteristics as ROW avoidance areas. This addition results in differing acreages due to differences between the alternatives within these land categories, primarily due to the inclusion of 78,600 acres of non-WSA lands with wilderness characteristics being managed to protect, preserve and maintain the wilderness characteristics. The Proposed RMP places greater restrictions on ROWs than does Alternative N because an additional 79,100 acres fall into the closed or subject to major constraints (NSO) oil and gas leasing categories. This is somewhat offset by the management of 12,250 fewer acres as ACECs under the Proposed RMP. In addition, although the Proposed RMP recommends one eligible river segment (5 miles) as suitable (while no suitability determination is made in Alternative N), all eligible river segments are managed to protect their outstandingly remarkable values, free-flowing nature, and tentative classification under Alternative N. To the extent that areas are excluded for ROWs, there could be an adverse impact on certain types of economic development that require such development. To the extent that such areas are avoidance areas, additional costs could be imposed on those entities desiring ROWs. Without knowing the quantity of ROWs foregone by this alternative, the economic impacts cannot be quantified.

As discussed earlier, the Proposed RMP retains lands in public ownership for 78,600 acres being managed to protect, preserve and maintain wilderness characteristics. Although expected to be minor, this decision could potentially affect community expansion opportunities and any resultant economic benefits. Retaining these lands in public ownership will result in continued PILT payments to local governments.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Impacts from management actions under the Proposed RMP are similar to Alternative A. Although the total number of acres closed to oil and gas leasing (447,300 acres) or open to leasing subject to major constraints (NSO) (154,500 acres) is greater than under Alternatives N or A, this would not likely have substantial effects on oil and gas activity for the reasons noted for Alternative N. These reasons include the relatively lower minerals potential in the areas closed or NSO. Additionally, 446,900 acres of the 447,300 acres closed to leasing are located in WSA's, which are outside the scope of the plan.

Leasable Minerals—Coal

Impacts from management actions under the Proposed RMP on coal production and its impact on the local economy likely would be similar to Alternative A. The Wasatch and Emery coal fields would remain largely available. The Proposed RMP includes policies and decisions that are designed to balance extractive industries, such as coal mining, with needs to protect, restore, and enhance natural values. As in Alternative A, whether additional coal development takes place largely depends upon energy prices, the relative economics of coal production in the RFO versus other regions, and site-specific environmental review.

Locatable and Salable Minerals

The Proposed RMP recommends withdrawing an additional 21,500 acres from mineral entry relative to Alternative A. This could have minor-to-negligible effects on the local economy. The Proposed RMP

closes an additional 400 acres to disposal of salable minerals. These areas are largely devoid of potential or at uneconomic distances from users (e.g., sand and gravel deposits located at a distance from significant construction activity), rendering socioeconomic impacts similar to Alternative A.

Impacts from Special Designations

Wild and Scenic Rivers

The Proposed RMP recommends one river segment (5 miles) as suitable for inclusion into the wild and scenic rivers system, tentative classification of wild. Restrictions under the Proposed RMP include closing the area to OHV use, oil and gas leasing with NSO, and recommending for withdrawal from mineral entry. These restrictions could potentially adversely impact individuals or businesses in the planning area that rely on these resources. The acreage affected, however, is small, and these effects would likely be minor. The OHV restrictions in particular would have negligible-to-minor impacts, as the segments in question receive little if any motorized use due to topography or current OHV management. The designation of WSRs under the Proposed RMP could potentially lead to an increase in tourism revenue to local communities, thus having long-term beneficial impact on the local economies. The designation of rivers or river segments could attract more people to the area who enjoy the type of recreation that often accompanies these designations (including high scenic qualities and opportunities for solitude).

Areas of Critical Environmental Concern

The Proposed RMP would designate two ACECs totaling 2,530 acres (which is less than under Alternative N but more than under Alternative A). This would create additional opportunities for businesses and individuals currently impacted by restrictions within ACECs under Alternative N, but less opportunities than under Alternative A. Individuals whose social well-being is enhanced by the relevant and important values currently protected could be adversely impacted by the Proposed RMP, relative to Alternative N. For all groups, however, socioeconomic impacts likely would be minor, given the small amount of acreage currently designated as ACECs.

Alternative C

Impacts from Vegetation

This alternative would rely on using treatment methods that mimic natural processes, including prescribed fire for vegetation treatments and weed control. A maximum of 26,000 acres per year would be so treated, less than the 73,600 acres per year allowed under Alternative A and the Proposed RMP. Fewer opportunities for contracts, income, and employment would be available than under Alternative A or the Proposed RMP. No pest control measures would be implemented; thus, opportunities for contracts, income, and employment available under Alternative A and the Proposed RMP for pest control would not be available under this alternative. Impacts on forage, and thereby on grazing economics, cannot be predicted.

Impacts from Visual Resources

VRM designations for Alternative C are very similar to the Proposed RMP; therefore, socioeconomic impacts would be similar.

Impacts from Fire and Fuels Management

Fire suppression efforts and hazardous fuel reduction treatments could generate economic activity from contracts and result in income and employment gained by those providing the suppression and treatments, plus indirect and induced effects. This activity would be less than under Alternative A or the Proposed RMP because the annual treatments are limited to 26,000 acres per year. The fire suppression efforts could be greater than under Alternative A or the Proposed RMP because the annual fuel treatments

acreage could be less per year. As noted in the discussion for Alternative A, however, a more likely scenario is continued treatment of about 10,000 acres annually, with an economic impact similar to Alternatives N and A and the Proposed RMP.

Impacts from Non-WSA Lands with Wilderness Characteristics

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under this alternative, resulting in no additional impacts on socioeconomics.

Impacts from Forestry and Woodland Products

Relative to Alternative N, there could be some loss of income and jobs due to this alternative's prohibitions on commercial timber harvesting and commercial collection of seeds and live plants. Such losses are likely to be very small relative to the total socioeconomic study area economy. However, these prohibitions might have important local impacts and could reduce opportunities to maintain aspects of local culture based on harvesting natural resources. Prohibiting commercial seed harvesting would shift this activity to other areas outside of the RFO. Non-commercial harvesting of woodland products would not change relative to Alternative N.

Impacts from Livestock Grazing

Impacts would be the same as described under Alternative N.

Impacts from Recreation

Management actions under this alternative place the emphasis on protection of natural systems. This alternative could produce less of an impact on recreation arising from resource development and extraction than Alternatives N and A or the Proposed RMP.

Management of SRMAs would have a stronger emphasis on primitive, semi-primitive, and non-motorized uses than under Alternatives N and A or the Proposed RMP. Fewer recreational facilities would be developed. Expenditures by individuals who desire developed facilities might decline relative to those alternatives. These expenditure reductions could cause a loss of income and jobs in the socioeconomic study area. Whether these expenditures would be offset by spending from recreationists desiring more primitive recreation experiences cannot be quantified without knowing how numbers would shift (if at all) under this alternative.

Impacts from Travel Management

Under Alternative C, areas closed to OHV use (683,000 acres) and areas in which OHV use is limited to designated routes (1,445,000 acres) would be greater than Alternatives N and A and the Proposed RMP and less than Alternative D. Under this alternative, no acres would be designated as open. The mileage of closed routes in this alternative would be greater than Alternatives N and A and the Proposed RMP and less than Alternative D. Thus the quality of experience for some OHV recreation users, particularly those desiring an unrestricted OHV environment, could be reduced. Restrictions on OHV recreation use could reduce the draw of OHV recreation users from beyond the RFO, resulting in some reduction of expenditures relative to the other alternatives. However, the lowered impacts on scenery that could result from these restrictions could enhance the recreational experience of those OHV users whose primary interest is enjoying the scenic qualities of the area. Limitations and closures to OHV recreation use would enhance the recreational experiences of individuals seeking non-motorized recreational environments.

Alternative C provides 2,601 miles of designated routes and 591 miles of designated routes with seasonal closures or size width restrictions, and it closes 1,188 miles of routes to motorized travel. This represents an additional closure of 984 miles relative to the Proposed RMP. Although not quantifiable, this alternative has greater potential to adversely impact the local economy, but only to the extent that local

residents use these routes in their economic pursuits. Similarly, to the extent that these routes are used for recreational use or access, the additional closures could adversely affect the experiences and potential expenditures of these users. Conversely, those who desire a more primitive recreation experience would likely find their recreational experiences enhanced under this alternative.

Impacts from Lands and Realty

The type of impacts from lands and realty under this alternative are similar to those described under the Proposed RMP, except that no public lands would be considered for FLPMA Section 203 disposals. Thus, any fiscal or economic development benefits achieved in the other alternatives from disposal of public lands would be foregone.

Under Alternative C, certain areas would be avoidance or exclusion areas for ROWs, including utility corridors and communication sites:

- WSAs
- ACECs
- Suitable WSR corridors
- Areas closed to oil and gas leasing
- Areas open to oil and gas leasing subject to major constraints (NSO).

Although the *categories* of lands are similar to Alternative N and the Proposed RMP, the acreages differ due to differences between the alternatives within these land categories. Alternative C places greater restrictions on ROWs than Alternative N and the Proposed RMP because an additional 173,700 acres fall into the closed or open subject to major constraints (NSO) mineral leasing categories. Additionally, Alternative C manages an additional (as compared to the Proposed RMP) 884,280 acres as ACECs. Alternative C also manages an additional 10 segments of WSRs, totaling an additional 76 miles. To the extent that areas are excluded for ROWs, there could be an adverse impact on certain types of economic development that require such development. To the extent that such areas are avoidance areas, additional costs could be imposed on those entities desiring ROWs. Without knowing the quantity of ROWs foregone by this alternative, the economic impacts cannot be quantified.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Impacts from management actions under this alternative are similar to the Proposed RMP. Although the total number of acres closed to fluid mineral leasing (586,300 acres) or open to leasing subject to major constraints (NSO) (148,700 acres) is greater than Alternatives N and A and the Proposed RMP, this would not likely have substantial effects on oil and gas activity for the reasons noted for Alternative N.

Leasable Minerals—Coal

This alternative includes objectives and management actions that are designed to protect, restore, and enhance natural values. Surface and subsurface coal leases would be prohibited in those areas designated as VRM Class I or II; thus this alternative could be more restrictive on coal leasing than the Proposed RMP, which restricts such leasing only in areas designated as VRM Class I. However, as in the Proposed RMP, whether additional coal development takes place largely depends upon energy prices, the relative economics of coal production in the RFO versus other regions, and site-specific environmental review.

Locatable and Salable Minerals

The area proposed for withdrawal from mineral entry is larger, by 154,900 acres, than the Proposed RMP. This has some potential to preclude development of some economically viable deposits, and it could

reduce opportunities for individuals interested in maintaining a mining economy and culture. However, the potential for locatable mineral development in the RFO is at this time assumed to be low. Thus, economic and cultural impacts could also be low.

The area closed to disposal of salable minerals is also larger than in the Proposed RMP, totaling 586,300 acres. These areas are largely devoid of potential, or at uneconomic distances from users (e.g., sand and gravel deposits located at a distance from significant construction activity), rendering socioeconomic impacts similar to the Proposed RMP.

Impacts from Special Designations

Wild and Scenic Rivers

Alternative C recommends 12 river segments (135 miles) as suitable for inclusion into the WSR system. Restrictions under this alternative include closing to OHV use, closing to oil and gas leasing or open to oil and gas leasing subject to major constraints (NSO), and recommending for withdrawal from mineral entry. These restrictions could potentially adversely impact individuals or businesses that rely on these resources. The acreage affected, however, is small and these impacts would likely be minor. Furthermore, nearly three-quarters of the suitable river miles under this alternative are within WSAs, encompassing most of the Dirty Devil River and its side drainages. Thus, the restrictions proposed are already in place under IMP for these particular segments, leading to socioeconomic impacts identical to the current situation. The OHV restrictions in particular would have negligible-to-minor impacts as the segments in question receive little if any motorized use due to topography or current OHV management. The designation of WSRs under Alternative C could potentially lead to an increase in tourism revenue to local communities, thus having long-term beneficial impact on the local economies. The designation of rivers or river segments could attract more people to the area who enjoy the type of recreation that often accompanies these designations (including high scenic qualities and opportunities for solitude).

Areas of Critical Environmental Concern

Alternative C would designate 16 ACECs, totaling 886,810 acres. Table 4-93 summarizes the major management prescriptions for the 16 ACECs under Alternative C that have the potential to impact socioeconomics.

Table 4-93. Management Prescriptions in ACECs Potentially Affecting Socioeconomics—Alternative C

ACEC Name	Acres	Acres within WSAs	OHV Closed Acres	Closed Routes (Miles)	Oil & Gas Closed Acres	VRM Class I Acres
Badlands	88,900	40,400	82,900	12	88,900	40,400
Bull Creek	4,800	0	0	1	0	0
Dirty Devil/North Wash	205,300	130,700	204,700	78	165,500	130,700
Fremont Gorge/Cockscomb	34,300	2,800	23,200	9	4,500	2,800
Henry Mountains	288,200	130,000	207,200	164	164,800	130,000
Horseshoe Canyon	40,900	37,800	40,800	5	37,800	37,800
Kingston Canyon	22,100	0	0	10	0	0
Little Rockies	49,200	37,400	38,400	3	37,400	37,400

ACEC Name	Acres	Acres within WSAs	OHV Closed Acres	Closed Routes (Miles)	Oil & Gas Closed Acres	VRM Class I Acres
Lower Muddy Creek	16,200	0	14,600	17	16,200	0
Old Woman Front	330	0	330	0	0	0
Parker Mountain	107,900	0	0	46	0	0
Quitchupah	180	0	90	0	90	0
Rainbow Hills	4,000	0	4,000	26	0	0
Sevier Canyon	8,900	0	0	3	0	0
Special Status Species	15,100	0	0	0	0	0
Thousand Lakes Bench	500	0	500	0	0	0
Total	**886,810**	**379,100**	**616,720**	**374**	**515,190**	**379,100**

As Table 4-93 indicates, approximately 379,100 acres (42.7%) of the 16 ACECs are partially within WSAs that are managed under IMP. For this acreage, impacts to socioeconomics would be identical to current conditions. For example, the acreage designated as VRM Class I under Alternative C is identical to the WSA acreage, with no additional VRM Class I acreage attributable to ACEC designations. OHV management and oil and gas leasing restrictions, however, encompass additional non-WSA acreage. For the 16 ACECs, 200,100 additional acres (compared to the Proposed RMP) are in the closed OHV category. For oil and gas leasing, an additional 137,400 acres are in the closed to leasing category. These additional restrictions would likely have adverse impacts for OHV enthusiasts and could adversely impact individuals and businesses that rely on mineral resources for all or part of their livelihoods. Individuals whose social well-being is enhanced by the specific relevant and important values protected within these ACECs would be beneficially affected by this alternative, relative to Alternatives N and A and the Proposed RMP.

Alternative D

Impacts from Vegetation

Impacts would be the same as described under Alternative C.

Impacts from Visual Resources

Alternative D places the greatest restrictions on development to protect visual resources. As discussed earlier, the restrictions to protect visual resources are decisions within other resource programs that can impact visual quality. Restrictions under this alternative to protect scenic qualities include restrictions on vegetative treatments and fuels management, travel management, minerals and energy, lands and realty, and recreation. The restrictions on development within VRM Class I and II areas under this alternative have the greatest potential to restrict economic opportunities for those whose livelihood depends, all or in part, on the restricted activities. This would be particularly true in the case of minerals development and motorized recreation. Conversely, the scenic qualities of the RFO that attract visitation would receive the greatest degree of protection under Alternative D. This could benefit those businesses that rely on that type of recreation visitation, including lodging, restaurants, and outfitting.

Impacts from Fire and Fuels Management

Impacts would be the same as described under Alternative C.

Impacts from Non-WSA Lands with Wilderness Characteristics

Alternative D manages 682,600 acres of non-WSA lands with wilderness characteristics in such a manner as to provide protection for the qualities of naturalness, outstanding opportunities for primitive and unconfined recreation or solitude, and supplemental values where present. As with visual resources, this resource itself is not a management tool but relies on restrictions of other resource programs to achieve its management goals. The tools used include restrictions on vegetative and fuels treatments, travel management, minerals and energy, lands and realty, and recreation. These restrictions are identical to the those discussed throughout Chapter 4 for each of these resources under Alternative D, and the socioeconomic impacts are similar for each of these resources so restricted.

As with visual resources, the restrictions on development under this alternative have the greatest potential to restrict economic opportunities for those whose livelihood depends, all or in part, on the restricted activities. This would be particularly true in the case of minerals development and motorized recreation. Conversely, those whose livelihood or sense of well-being depends on values associated with wilderness characteristics and primitive recreation would perceive the greatest benefit under Alternative D. This alternative could benefit those businesses that rely on those recreation visitors who value wilderness qualities.

It is not possible to predict whether the potential socioeconomic gains described above would outweigh the socioeconomic losses that could result from this alternative. Managing lands for wilderness characteristics may have some benefits to the local economy, above and beyond benefits to individual users of these areas. There is extensive literature that argues that protecting lands as wilderness provides local, regional, and even national economic benefits. Other research suggests that areas with protected lands are more likely to attract higher income individuals, as well a businesses, who value the types of recreation activities provided by protected areas. Still other research argues that certain types of high-dollar recreation, such as hunting, are enhanced by wilderness protection. While most of these studies have focused on the benefits accruing from *designated* wilderness, it is possible that the same arguments may be applicable to non-WSA lands with wilderness characteristics[4].

Impacts from Forestry and Woodland Products

Impacts would be similar to those described under Alternative C, with the addition that neither commercial nor non-commercial wood collecting would be allowed in non-WSA lands with wilderness characteristics or in WSR corridors. No live plant or seed collecting would be allowed in these areas. However, these prohibitions could have local social and economic impacts and could reduce opportunities to maintain aspects of local culture based on harvesting natural resources.

Impacts from Livestock Grazing

Impacts would be the same as described under Alternative N.

Impacts from Recreation

Impacts would be similar to those described under Alternative C, except that this alternative would include management prescriptions to protect wilderness characteristics on 682,600 acres of non-WSA lands with wilderness characteristics. The overall management prescriptions associated with this alternative would have a stronger emphasis on primitive, semi-primitive, and non-motorized uses than any of the other alternatives. Fewer recreational facilities would be developed. Expenditures by individuals who desire developed facilities might decline relative to the other alternatives. These

[4] A good source with an extensive literature review is: "The net economic value of wilderness", Bowker, J.M.; Harvard, J.E.,III; Bergstrom, John C.; Cordell, H. Ken; English, Donald B.K.; Loomis, John B., in *The Multiple Values of Wilderness*, pp. 161–181, USFS, Southern Research Station, 2005.

expenditure reductions could cause a loss of income and jobs in the socioeconomic study area. For individuals seeking more primitive and non-motorized recreational experiences, use and resulting expenditures, and related economic activity, as well as experiential satisfaction, would likely be greatest under this alternative.

Impacts from Travel Management

Closure of areas to OHV recreation use (1,155,200 acres) and limiting OHV use to designated routes in other areas (972,800 acres) would be greatest under this alternative. Thus, the quality of experience for some OHV recreation users would be reduced as OHV riding takes place in more limited areas, increasing crowding in some. Restrictions on OHV recreation use could reduce the draw of OHV recreation users from beyond the planning area, resulting in some reduction of expenditures relative to the other alternatives. Limitations and closures to OHV recreation use would enhance the recreational experiences of individuals seeking non-motorized recreational environments.

The miles of routes designated, designated with restrictions, and closed would be similar to Alternative C. The miles of closed routes would be higher by 54 miles, an increase of approximately 5% over Alternative C. The socioeconomic impacts of route designations under Alternative D would thus be similar to Alternative C.

Impacts from Lands and Realty

Socioeconomic impacts from land tenure adjustments would be the same as for Alternative C. Under Alternative D, certain areas would be managed as avoidance or exclusion areas for ROWs, including utility corridors and communication sites:

- WSAs
- ACECs
- Eligible WSR corridors
- Non-WSA lands with wilderness characteristics
- Areas closed to oil and gas leasing
- Areas open to oil and gas leasing subject to major constraints (NSO).

Although the *categories* of lands are similar to Alternatives N and C and the Proposed RMP, the acreages differ due to differences between the alternatives within these land categories. Alternative D includes more areas as ROW exclusion/avoidance areas than does Alternative C because an additional 468,800 acres fall into the closed or NSO mineral lease categories. To the extent that areas are excluded for ROWs, there could be an adverse impact on certain types of economic development that require such development. To the extent that such areas are avoidance areas, additional costs could be imposed on those entities desiring ROWs. Without knowing the quantity of ROWs foregone by this alternative, the economic impacts cannot be quantified.

Impacts from Minerals and Energy

Leasable Minerals—Oil and Gas

Alternative D closes 1,160,500 acres to oil and gas leasing and opens 43,300 acres to leasing subject to major constraints (NSO). As described in detail in the non-WSA lands with wilderness characteristics section, this alternative projects one less well drilled per year in RFD Areas 1 and 2 and projects 13 wells per year fewer in RFD Area 3 (two wells over 15 years). This would result in a reduced spending on Phase 1 exploration and development of $2.87 million (1.13 wells multiplied by $2.25 million to drill and complete one successful well, less if unsuccessful), computed on an average annual basis. As discussed under Alternative N, not all of these expenditures would likely be local.

An additional potential impact to state revenues is the potential loss to SITLA from not being able to lease or develop lands bordered all or in part by non-WSA lands with wilderness characteristics. The value of these lands for oil and gas leasing or development may be reduced if all or portions of public lands bordering these state lands are closed to new oil and gas leasing. This in turn could reduce the monies collected by the state (through SITLA), including royalties and severance taxes. These impacts can be estimated by using current data and incorporating several assumptions. If one assumes that any SITLA land whose perimeter is more than 50% bounded by BLM acreage closed to new oil and gas leasing as a result of implementing Alternative D and would be unavailable for development, and if one uses the projections of the RFD, one can project that slightly more than one well (1.16) would not be drilled over the life of the plan. Using data provided by the State of Utah, royalty payments to wells on SITLA lands averaged $57,065 as of early 2008. Severance taxes averaged $9,335 for all wells, regardless of land ownership. Multiplying these figures by the wells assumed to not be drilled, the fiscal loss to the state would total $66,516 in royalties and $10,881 in severance taxes in any year in which all 1.16 wells would have been in operation. This amount could increase over the life of the plan, as it is likely that some fraction of these wells would be in operation in several (or even all) years of the plan.

Similarly, one can compute potential spending on oil and gas activities (including coalbed methane) lost to the planning area, if these SITLA lands prove undevelopable under Alternative D. Using the assumptions outlined in the Impacts from Minerals and Energy for Alternative N: No Action section, the loss in spending in the local area would be approximately $721,100 in any year in which all 1.16 wells would have been in operation. This amount could increase over the life of the plan, as it is likely that some fraction of these wells would be in operation in several (or even all) years of the plan.

The potential loss to SITLA from not being able to lease or develop lands bordered all or in part by non-WSA lands with wilderness characteristics could also potentially increase school trust land management costs. Restrictive designations could increase the cost of access to school trust lands, impair marketability, and increase expenditures of trust resources in pursuing land exchanges with BLM. It is not possible to estimate the potential increase in school trust land management costs with available data.

Leasable Minerals—Coal

This alternative includes policies and decisions that are designed to protect, restore, and enhance natural values and to protect non-WSA lands with wilderness characteristics. Protecting the non-WSA lands with wilderness characteristics would remove 44,300 acres of identified coal resource land from further consideration for leasing, primarily in the Henry Mountains. But this study assumes this coal field would not be developed within the planning period. Whether additional coal development takes place largely depends upon energy prices, the relative economics of coal production in the RFO versus other regions, and site-specific environmental review.

Locatable and Salable Minerals

Alternative D proposes withdrawing 903,900 acres from development of locatable minerals and closing 1,160,500 acres to salable minerals. This has some potential to preclude development of some economic deposits, and it could reduce opportunities for individuals interested in maintaining a mining economy and culture. However, the potential for both locatable mineral development and disposal of salable minerals in the RFO is, at this time, assumed to be low. Thus, economic and social impacts could also be low.

An additional potential loss to SITLA would be revenues foregone from its inability to lease its lands for other types of minerals. In FY2007, SITLA generated statewide $12 million from leases of coal and other minerals. This amounted to 8% of all SITLA revenues. (In contrast, oil and gas revenues accounted for 40% of SITLA revenues.) To the extent that such minerals are present on SITLA lands that prove to be

undevelopable, there would be a financial loss to SITLA. It is not possible to estimate this potential loss with available data, but the impact is expected to be minor.

Impacts from Special Designations

Wild and Scenic Rivers

Impacts are the same as those described under Alternative C.

Areas of Critical Environmental Concern

Alternative D designates acreage identical to Alternative C, but it offers a higher degree of protection of the relevant and important values. Table 4-94 summarizes those restrictions that could impact socioeconomics.

Table 4-94. Management Prescriptions in ACECs Potentially Affecting Socioeconomics—Alternative D

ACEC Name	Acres	Acreage within WSA	OHV Closed Acres	Closed Routes (Miles)	Oil & Gas Closed Acres	VRM Class I Acres
Badlands	88,900	40400	84,800	10	88,900	75,800
Bull Creek	4,800	0	300	1	0	300
Dirty Devil/North Wash	205,300	130,700	204,800	89	204,300	203,900
Fremont Gorge/Cockscomb	34,300	2,800	20,400	20	18,900	18,700
Henry Mountains	288,200	130,000	230,400	162	239,500	222,500
Horseshoe Canyon	40,900	37,800	40,800	5	40,800	40,800
Kingston Canyon	22,100	0	16,400	20	0	16,500
Little Rockies	49,200	37,400	46,900	4	46,900	46,300
Lower Muddy Creek	16,200	0	15,900	17	16,200	15,800
Old Woman Front	330	0	330	0	0	0
Parker Mountain	107,900	0	0	46	0	0
Quitchupah	180	0	110	0	0	30
Rainbow Hills	4,000	0	4,000	26	0	0
Sevier Canyon	8,900	0	0	3	0	0
Special Status Species	15,100	0	0	0	0	0
Thousand Lakes Bench	500	0	500	1	0	40
Total	**886,810**	**379,100**	**665,640**	**404**	**655,500**	**640,670**

As Table 4-94 indicates, and identical to Alternative C, approximately 379,100 acres (42.7%) of the 16 ACECs are in WSAs currently managed under IMP. For this acreage, impacts to socioeconomics would be identical to current conditions. For example, the acreage designated as VRM Class I under Alternative C is identical to WSA acreage, with no additional acreage attributable to ACEC designations. Additional restrictions on some resources, however, are present in this alternative, above and beyond WSA acreage and the acreage described in Alternative C. These additional acreages in VRM Class I, restrictive oil and

gas lease categories, and closed OHV areas are due almost exclusively to the overlap between the ACECs and non-WSA lands with wilderness characteristics. The increased restrictions on these resources in Alternative D are the result of prescriptions for managing non-WSA lands for wilderness characteristics, rather than prescriptions for protecting the relevant and important values of the ACECs.

These additional restrictions would likely adversely impact OHV enthusiasts and could adversely impact individuals and businesses that rely on mineral resources for all or part of their livelihoods. Individuals whose social well-being is enhanced by the specific relevant and important values protected within these ACECs would be beneficially affected by this alternative relative to the Proposed RMP and Alternatives N, A, and C.

Other Impacts on Socioeconomics

The following section projects impacts on facets of socioeconomics not fully described in the resource decisions discussed above. Specifically, this section discusses the impacts of BLM resource decisions on population, community services, environmental justice, and public health and safety.

4.6.2 Impacts to Population

Any population change that could be associated with implementation of alternatives under consideration in this RMP would likely be linked to employment changes. Activities on public lands in the RFO would continue to support a notable number of jobs in the socioeconomic study area under all alternatives. It is not anticipated that continuing current management actions under Alternative N would significantly affect population trends. Changes in employment in all action alternatives, whether quantified in this RMP or not, are not expected to be substantial relative to Alternative N or to each other. Therefore, population impacts of any of the alternatives would be negligible. Under Alternative A, localized impacts are possible within portions of the socioeconomic study area that are more closely tied to the employment opportunities generated by coal mining and oil and gas development. Under Alternatives C and D, employment could change somewhat in specific locations due to policies that favor resource preservation and passive use over resource development, but any resulting localized impacts to population trends would be minor.

4.6.3 Impacts to Community Services

Activities affected by RMP decisions could cause impacts to local government services in various ways. For instance, changes in demand for local government services could vary with changes in population tied to management actions. Significant changes in population could cause undue strain on infrastructure (e.g., roads, utilities, schools). As discussed above, notable population changes are not expected under any alternative. Therefore, identifiable changes in demand for government services are not expected due to changes in population.

Decisions under the alternatives could also cause impacts to services through changes in tax receipts. All alternatives are expected to continue to generate notable local tax revenues throughout the planning period, with some minor variations. For instance, management actions under Alternative A and the Proposed RMP would provide the greatest potential for community development and increased local tax revenues from land disposals, while management actions under Alternative C would preclude these potential benefits.

Management actions could also affect local government services directly. For instance, increased recreational use of RFO lands, likely under all alternatives due to regional and national trends, would increase the demand for local government services associated with safety, emergency services, and police

protection. While local search-and-rescue operations utilize volunteers, there would be a growing need for training, equipment, and resources. In addition, these operations must be supported by the Sheriff's Office in each county.

Increased government services might also be needed to support other activities such as somewhat greater oil and gas development under Alternative A. This could include emergency, social, and safety services as well as road maintenance and traffic control. However, oil and gas development in this and all alternatives is likely to be fairly limited compared to major oil and gas producing areas in other parts of the West.

4.6.4 Impacts on Public Finance

Management alternatives could affect various revenues collected by the Federal government, state government, and various local governments. The socioeconomic section of the PRMP/FEIS Chapter 3 details a variety of revenue sources that are tied to or related to natural resource management on BLM lands.

Current trends in coal production are expected. The Federal Government would continue to collect mineral rents, royalties, and possibly bonuses from coal mining operations. Fifty percent of these revenues would be retained by the Federal Government, and 50% forwarded to the State of Utah. The State would provide some of these revenues to local governments through a variety of funds, only one of which is directly proportional to the mineral revenues produced by each county. The State has no severance tax on coal. Local governments would continue to receive natural resource property tax revenues from coal mining. Whether changes in coal development take place largely depends upon energy prices, the relative economics of coal production in the RFO versus other regions, and site-specific environmental review. Revenues collected from coal mining operations would be impacted by changes in coal production levels. These revenues cannot be quantified in the PRMP/FEIS, given currently available information.

Oil and gas production expected under all alternatives would produce some new federal and state mineral revenues, and the State would in turn provide some oil and gas revenues to the counties of origin. The State would also obtain new revenues from its oil and gas severance tax, oil and gas conservation fee, and income taxes. Local governments would obtain new revenues from associated natural resource property taxes. Because the amount of oil production is unknown, these impacts cannot be quantified, but they are not expected to vary significantly among between the alternatives because the RFD scenario does not vary significantly among between the alternatives.

Under all alternatives, the BLM would collect revenues through ROW rents, recreation fees, grazing fees, mineral material fees, and other permit fees. Some of these fees would be forwarded to the federal treasury; others would be returned to state and local governments, local grazing boards, or retained and used by the Richfield Field Office.

All alternatives are expected to continue to generate local sales and lodging tax revenues through expenditures of visitors in local establishments. These revenues would increase through the planning period as visitation increases due to regional and national trends and management actions that increase the attractiveness of the decision area to non-local visitors.

Land tenure adjustments under the BLM lands and realty program could potentially impact local government finances. Disposal of BLM lands to private ownership may reduce PILT by the Federal Government to local government, but it would also result in payments of property taxes to local government by the new private property owner(s). Land exchanges to other governments may also impact PILT payments. Acquisition of private land by BLM would reduce property taxes paid to local

government but would increase PILT payments. Differences between the alternatives, as well as the net impact on local government finances, cannot be determined without detailed information on the specific property(ies) in question as well as the tax rates and other financial figures for the particular local government(s).

4.6.5 Environmental Justice

Executive Order 12898, Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations, requires federal agencies to identify and address disproportionately high and adverse human health and environmental impacts of federal programs, policies, and activities on minority or low-income populations. As noted in the Baseline Socioeconomic Profile (BLM 2003b) and Chapter 3, no socioeconomic study area counties:

- Have minority or low-income populations exceeding 50 percent
- Have minority or low-income populations that are 10 percentage points greater than figures for the State of Utah.

Therefore, for the purposes of this analysis and all management alternatives examined in this Final EIS, there are no environmental justice populations in the socioeconomic study area, and actions required to identify and mitigate impacts to such populations are not required.

4.6.6 Public Health and Safety

An inventory of abandoned mines throughout the RFO has not been completed. Some abandoned mines within the RFO may be considered public safety hazards or suspected to have environmental concerns due to potentially occurring hazardous materials. Through coordination with Utah Department of Oil, Gas, and Mining and subject to funding, abandoned mines will continue to be identified and closed in order of the physical safety hazard priority and availability of funding. None of the management actions would increase public exposure to the risks associated with these abandoned mines. As a result, impacts would be negligible.

Remediation of contaminated and hazardous sites is necessary for compliance with applicable federal and state rules and regulations. No hazardous or solid waste sites are known to occur on public lands within the planning area. Incidental dumping of hazardous materials occurs, but it is rare and concentrated mostly in close proximity to towns and highways primarily within the RFO. None of the management actions proposed by the alternatives would require the handling, storage, or release of hazardous, toxic, or unapproved solid wastes that would cause health and safety concerns. Small amounts of fuels, chemicals, or other vegetation treatment products would be used throughout the RFO, but amounts would be relatively small and mostly applied away from populated areas. As a result, health and safety impacts would be negligible and are not analyzed further.

4.7 CUMULATIVE IMPACTS

Cumulative impacts are the effects on the environment resulting from the impact of implementing the Proposed RMP in combination with other actions outside the scope of this plan, either within the planning area or outside it. As stated in 40 CFR 1508.7 (1997), a "cumulative impact is the impact on the environment that results from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

Resource decisions from this Proposed RMP could combine with other past, present, and reasonably foreseeable future actions to produce cumulative impacts to resources in the planning area or adjacent lands that would be within the influence of the Proposed RMP. In other words, the scope of implementation of the alternatives of this Proposed RMP would include any activities and conditions, either within the RFO boundaries or outside, which would directly or indirectly influence the same resources as analyzed in the Proposed RMP. Planning projects in the region that could contribute to cumulative impacts include any area that would be affected by the decisions of the plan because of their geographic, administrative, or political ties to the Proposed RMP lands, such as adjacent BLM Field Office lands, Forest Service lands, and State-owned lands. Private lands, surrounding communities, and city and county jurisdictions could also produce cumulative impacts where land is developed or projects are constructed adjacent to BLM public lands.

The analysis of cumulative impacts serves to place the projected incremental impacts from the Proposed RMP in the context of past, present, and future impacts. Combining the projected impacts of the Proposed RMP with past, present, and future impacts necessarily involves projections and limited analyses, to the extent possible. Analyses are limited and qualitative in nature due to the inability to isolate the specific contribution of all past and present impacts from non-federal lands; challenges of predicting potential impacts for reasonably foreseeable future actions; the broad programmatic and strategic nature of the Proposed RMP; unknown nature and pace of resource uses and technological changes that could occur; and changing circumstances related to agency priorities, policies, and the economy. It is neither practical nor required to exhaustively analyze all possible cumulative impacts. Instead, CEQ indicates the cumulative impact analysis should focus on meaningful impacts due to the nature of the RMP decisions

4.7.1 Methodology

The cumulative impacts discussion that follows considers the alternatives in the context of the broader human environment and specifically actions that occur outside the scope and geographic area covered by the Proposed RMP. Because of the programmatic, broad-scale nature of this Proposed RMP, this assessment is broad and generalized to address potential effects that could occur from a hypothetical management scenario when combined with other activities or projects. This assessment is primarily qualitative for many resources because of the lack of detailed information that would result from project-level decisions and other activities or projects.

Cumulative impact analysis is limited to important issues of national, regional, or local significance. Therefore, not all issues identified for direct or indirect impact assessment in this Final EIS are analyzed for cumulative effects. Because of the wide geographic scope of a cumulative impact assessment and the variety of activities assessed, cumulative impacts are commonly examined at a more qualitative and less detailed level than are the direct and indirect impacts presented previously in this chapter. This analysis includes discussion of factors that make up the current environment. Factors that could be expected to influence that environment in the future are also considered. Reasonably foreseeable future action

scenarios are projections made only for the prediction of future impacts; they are not actual planning decisions or resource commitments.

Projections, which have been developed for analytical purposes only, are based on current conditions and trends and represent a best professional estimate. Unforeseen changes in such factors as economics, demand, and federal, state, and local laws and policies could result in different outcomes than those projected for this analysis.

The following factors were considered in this cumulative impact assessment:

- Federal, non-federal, and private actions
- The potential for effects to cross political and administrative boundaries
- The characteristics of each affected resource
- The comparative scale of cumulative impacts across alternatives.

4.7.2 Past and Present Actions

4.7.2.1 Population and Settlement

Overall, the RFO is sparsely populated due to its elevation, aridity, and ruggedness. Total population in the five-county, 5,400,000-acre planning area barely exceeds 50,000 residents, and most of this is concentrated in Sevier and Sanpete counties. Piute, Wayne, and Garfield counties are still sparsely populated. All five counties experienced early pioneer settlement dating back to the 1840s. Farms and communities were established along the arable valleys bordering the Sevier and Fremont Rivers and their tributaries. Many of these areas are still used for agriculture-related uses; some have been intensively developed. During the mining heyday, some of the less hospitable areas in the mountains and desert were used for mining ventures, resulting in some residential occupation that still exists. Many of the towns were abandoned when lodes played out or economic conditions changed.

Private land totals 15% of the area. The most evident changes to the natural environment are concentrated in and around the settled areas in which native vegetation and wildlife have been displaced by homes, farms, and other developments.

4.7.2.2 Land Ownership and Management

Most of the RFO remains in public ownership and is managed by the Federal Government or State of Utah. Three federal agencies manage 77% of the land: BLM, 39%; Forest Service, 27%; and National Park Service, 11%. Proposed actions on these lands potentially affecting the environment are analyzed under NEPA, which ensures, among other things, that cumulative impacts are addressed. The State of Utah manages an additional 7% of the land base. Many State land parcels are isolated within large tracts of public land. Impacts from activities on State lands can affect the surrounding federal lands; likewise, impacts from activities on federal land can affect State lands. The National Park Service units, Canyonlands and Capitol Reef National Parks, and Glen Canyon National Recreation Area (NRA) attract large numbers of visitors, which can impact surrounding public lands. Conversely, BLM management decisions for resource uses such as OHVs, oil and gas leasing, and coal leasing can impact national park resources.

4.7.2.3 Water Development

Agriculture in this arid land depends on irrigating crops with water diverted from streams, rivers, and springs. Concentrated along the Sevier and Fremont Rivers and their tributaries is an extensive system of irrigation diversions, canals, pipelines, and ditches. There are 21,000 surface water, groundwater, and point-to-point agricultural water diversions within the RFO. Major water storage facilities include the Gunnison, Rocky Ford, Johnson Valley, Otter Creek, Yuba, Koosharem, and Piute Reservoirs. The water diversions and reservoirs alter the timing of flows, temperature, turbidity, and ecological composition of the rivers and streams, which in turn affects water quality and quantity. Most of the streams within the RFO have been affected by water development. Those few remaining segments that remain relatively unaffected were identified and considered in the WSR analysis.

4.7.2.4 Livestock Grazing

Closely associated with pioneer settlement was livestock grazing on the surrounding public domain, in both the mountains and deserts. The environmental consequences of this early, unregulated grazing led to the establishment of the forest reserves (national forests) and the Forest Service and later, passage of the Taylor Grazing Act and establishment of the Grazing Service, which later became the BLM. Grazing continues today on the public lands and the national forests. Livestock numbers have generally been considerably reduced from what they were in the past, but evidence of past abuses remains on the land.

4.7.2.5 Mineral Development

Locatable mineral exploration and development dominated portions of the RFO in the past, most notably in the Tushar and Henry Mountains and near the towns of Marysvale and Ticaboo. Evidence of past mining activity, such as adits, shafts, roads, old buildings, and machinery remain on the land. Current mineral activity includes the SUFCO coal mine (located north of I-70 in Salina Canyon), gypsum mining (at Sigurd), salt mining (at Redmond), renewed interest in uranium mining (near Ticaboo and Hanksville), sales of various mineral materials (mostly sand and gravel) throughout the RFO, and oil and gas exploration and production in the Sevier and Sanpete Valleys, as discussed under the Reasonably Foreseeable Actions (Section 4.7.3).

4.7.2.6 Industrial Development

The RFO is not heavily industrialized. There are two gypsum plants operating in Sigurd and a gypsum mill in Richfield that use gypsum mined in the San Rafael Swell. There is also a salt mine and plant located in Redmond that produces and markets salt products, and a clay plant in Aurora that also gets clay from the San Rafael Swell.

4.7.2.7 Transportation System

Populated areas within the RFO are served by federal and state highways including Interstate 70, U.S. Highways 89 and 50, and State Highways 12, 24, 28, 62, 72, and 95. The Forest Service and National Park Service maintain networks of road systems within their respective ownerships; the counties maintain roads around communities and on the public lands. Currently there is no rail service within the RFO, but there is a proposal to construct a rail line in Sanpete and Sevier counties in the near future.

4.7.2.8 Off-Highway Vehicles

OHVs, particularly all-terrain vehicles (ATVs), are popular within the planning area for agricultural and recreational use. The Paiute Trail System, a joint effort of federal, state, and local agencies and

communities, is an extensive trail system on the west side of the planning area that links federal- and state-managed public lands with communities. It is a model of OHV management and interagency cooperation and has become an attraction for visitors from outside the area. There are areas of intensive ATV use throughout the area, particularly around some of the communities, where soils, vegetation, and scenic values are being affected.

Overall recreation use within the RFO has grown slightly. Vehicle-based recreation (OHV) use has become popular for a variety of recreational outings, including camping, hunting, and exploring, and OHV-specific activities such as hill climbing and trials riding (rock climbing). As vehicle-based recreation has grown and OHVs adapted for use on rough terrain, areas previously inaccessible for full-sized vehicles have become accessible for ATVs. OHV use has increased on public lands. The trend continues to grow as ATVs become more affordable and popular.

4.7.3 Reasonably Foreseeable Future Actions

4.7.3.1 Population Growth

Over the next 50 years, the population within the planning area is expected to grow by 64% (Table 4-95 and Table 4-96), somewhat less than the population growth in Utah (Table 4-96), which is expected to increase by 140% during the same period.

Table 4-95. Predicted Population Growth in Counties within the Planning Area

	Year	Garfield*	Piute	Sanpete	Sevier	Wayne
Population Projections	2000	4,800	1,400	22,800	18,900	2,500
	2010	5,000	1,500	27,900	21,000	2,800
	2020	6,000	1,800	32,900	24,900	3,500
	2030	6,700	1,800	35,200	26,900	3,900
	2040	7,400	1,900	36,900	28,300	4,300
	2050	8,000	2,000	38,500	29,700	4,600
% Increase	**2000–2050**	**67%**	**43%**	**69%**	**57%**	**84%**

Source: Governor's Office of Planning and Budget 2005
*Includes all of Garfield County.

Table 4-96. Growth in the Planning Area and Utah

	Year	Planning Area*	Utah
Population Projections	2000	50,400	2,246,600
	2010	58,200	2,833,300
	2020	69,100	3,486,200
	2030	74,500	4,086,300
	2040	78,800	4,701,400
	2050	82,800	5,368,600
% Increase	**2000–2050**	**64%**	**140%**

Source: Governor's Office of Planning and Budget 2005
*Includes all of Garfield County.

4.7.3.2 Community Growth

Associated with population growth would be the conversion of farmland to residential housing and second homes. Potential impacts from community expansion include wildland-urban interface fire issues, infrastructure demands, water quantity and quality, habitat fragmentation, economic benefits, and social issues. Because most new homes are built on farmland, the loss of farmland is also an issue. Recent trends in the five-county area are shown in Table 4-97. Overall, the number of farms and farmland acreage is decreasing and would likely continue to decrease as farmlands are converted to homes.

Table 4-97. Number and Acreage of Farms in the Planning Area

		Garfield*	Piute	Sanpete	Sevier	Wayne
Number of Farms	1997	312	108	847	530	206
	2002	225	108	759	568	173
Land in Farms	1997	122,536 acres	41,991 acres	361,116 acres	149,774 acres	59,246 acres
	2002	79,879 acres	(Information missing)	357,184 acres	164,817 acres	42,374 acres

Source: USDA 2004b.
*Includes all of Garfield County.

4.7.3.3 Oil and Gas Leasing and Development

Significant portions of public and private lands in the Sevier–Sanpete Valley are currently leased for oil and gas and interest in leasing remains high. Future impacts from oil and gas development would be determined by the outcome of current exploration in the valley. Several producing wells have been drilled and proposals for others are being considered. A RFD scenario for oil and gas within the planning area was developed and is included in Appendix 12. Over the next 15 years, geophysical exploration for oil and gas would directly impact no more than 5,100 acres; and 454 oil and gas wells would be drilled, directly impacting no more than 3,080 acres. Indirect impacts could include impacts to scenic quality, increased traffic on roads and highways, conflicts with wildlife and wildlife habitat, removal of vegetation, and social issues in communities. These numbers reflect expected impacts on private, state, national forest, and public lands.

4.7.3.4 Industrial Development

NEVCO Energy Company is proposing to build a 270-megawatt circulating fluidized bed coal-fired steam electric generating plant near Sigurd. If constructed, the plant would emit nitrogen oxides and sulfur oxides. It would increase demand on water quantity and impact water quality. The project also would increase employment during the plant construction phase and provide a few long-term jobs in the region.

4.7.3.5 Water Development

The Wayne County Water Conservancy District has expressed interest in utilizing remaining unappropriated water in the Fremont River. Dams at sites upstream and downstream from Capitol Reef National Park have been proposed at various times in the past, as have pipelines and land exchanges to bring under cultivation new land along the Fremont River and surrounding areas. No specific proposals or approved plans have been disclosed, and implementation of the project continues to remain uncertain. The coal-fired plant discussed above would require an extraordinary amount of water, which would affect

present uses. Further withdrawals of water could adversely impact outstandingly remarkable values in segments of the Fremont and Dirty Devil Rivers identified as eligible WSRs.

4.7.4 Cumulative Impacts of the Proposed RMP and Draft Alternatives- Cumulative Impacts by Resource Category

Cumulative impacts are discussed only for resources or uses that may experience impacts. The potential for cumulative impacts to the resources and resource uses is discussed below. Cumulative impacts to hazardous materials and public safety are not anticipated; therefore, these topics are not discussed.

Air Quality

Drilling, coal mining, and OHV activities cause emissions of particulate matter, carbon monoxide, nitrogen oxide, sulfur dioxide, and volatile organic compound (VOC) emissions. In the future, these emissions could impact ambient air quality, visibility, and atmospheric deposition. The cumulative impact analysis of air quality within and near the planning area includes major sources such as coal-fired power plants and cogeneration facilities. No other RFD would increase regulated pollutants in the area.

Data provided by RFO staff were used to determine the base year conditions after the development of proposed energy resources was complete. In addition, emissions data were gathered for the area. The most recent Utah Division of Air Quality (UDAQ) Statewide Emissions Inventory Report shows the primary air pollutants in all counties are VOCs and carbon monoxide (CO), followed by PM_{10}, nitrogen oxides (NO_x), $PM_{2.5,}$ and sulfur oxides (SO_x). The only exception is Sevier County where NO_x is higher than PM_{10}. Table 4-98 shows the criteria pollutant levels in tons per year from the Statewide Emissions Inventory. The 2005 emissions from the sources in all counties are 186,241 tons per year (UDAQ 2005). The emissions from future BLM activities for the Proposed RMP and all alternatives range from 2,240 tons to almost 2,271 tons per year (Table 4-11). Emissions from proposed actions from BLM activities in the decision area will contribute approximately $1/10^{th}$ of a percent of the emissions of the State of Utah and approximately 1 percent of the sum of emissions from all counties listed in Table 4-98.

Table 4-98. 2005 Criteria Pollutant Inventory (tons per year)

Area	PM_{10}	$PM_{2.5}$	SO_x	NO_x	VOC	CO	TOTAL
Garfield	**1,544**	**457**	**55**	**634**	**45,336**	**14,930**	62,956
Piute	**240**	**57**	**19**	**138**	**11,703**	**2,935**	15,092
Sanpete	1,231	272	206	1,119	18,874	12,439	34,141
Sevier	1,504	436	262	3,423	19,369	17,047	42,041
Wayne	473	87	79	224	24,591	6,557	32,011
Utah Total	**79,890**	**26,485**	**47,910**	**186,254**	**884,847**	**952,840**	**2,178,226**
Utah Average	**2755**	**913**	**1,652**	**6,423**	**30,512**	**32,857**	**150,222**

Sources: (UDAQ 2005)

Considering that the permitted sources do not calculate emissions from some of the oil and gas sources and that the permitted emissions come from single-point sources, the future anticipated emissions from BLM activities will be low in comparison to existing sources.

Ozone concentrations in both Canyonlands and Zion National Parks have been over 85% of the air quality standard designed to protect public health. The more strict 8-hour ozone NAAQS recently adopted by EPA makes ozone concentrations of critical concern.

Soil and Water Resources

The cumulative analysis boundary for soil resources is the planning area and the fifth order watersheds that intersect the planning area boundary. The BLM management actions combined with other federal, state, local, private and other land incremental impacts to soils and water resources would most likely come from OHV use, mineral exploration and development, livestock grazing, vegetative treatments (including prescribed burning), and wildfires. Historically, these actions have all had cumulatively adverse impacts on soil resources by causing surface disturbance contributing to reduced soil productivity, soil compaction and erosion, and subsequent sedimentation. They have also resulted in the widespread introduction of invasive weeds, which can affect water resources through increased evapotranspiration rates and can affect soil resources through alterations to soil chemistry and productivity. However, BLM-permitted activities would comply with authorizing permit stipulations that would minimize soil erosion and degradation of water quality and are not expected to contribute to the overall cumulative effect to water quantity and quality from past, present, and reasonably foreseeable actions. In addition, fire use and vegetation treatments proposed by BLM under the Proposed RMP would incrementally improve watershed health, which could increase the ability of the watershed to retain moisture. This could increase the volume of water within the watershed.

Reasonably foreseeable future actions in the RFO and on federal, state, local, private, and other lands within and adjacent to the planning area that could have an adverse affect on soils and water resources include an expansion of recreational use (including increased OHV use) and ongoing mineral exploration, development, and production.

Under the Proposed RMP and all DRMP/DEIS alternatives, soils and water resources would benefit from management in accordance with the *Fundamentals of Rangeland Health* and *Standards and Guidelines for Grazing Administration*. Adherence with these standards would reduce many of the adverse impacts from future BLM actions. In general, DRMP/DEIS Alternatives N, and A, would be the least protective of soil and water resources, result in the least beneficial impacts to soils and water resources, and have the least mitigating effect on past impacts to soils and water resources in the RFO. Incremental impacts from DRMP/DEIS Alternatives and A would be the greatest. DRMP/DEIS Alternatives C and D would be the most protective and would provide the least amount of incremental impacts by excluding the most areas from OHV use and other forms of surface disturbance. The Proposed RMP would provide an intermediate level of protection and mitigation of cumulative impacts.

Vegetation

The cumulative impact analysis boundary for vegetation includes the entire planning area. Potential cumulative impacts on vegetation would occur from a combination of BLM and non-BLM activities and land uses occurring within the analysis boundary. Such incremental impacts would result primarily from vegetation treatments, oil, gas, and other minerals development, forage use by livestock and wildlife species, prescribed burning, wildfires, vegetative and increased OHV use. The combined amount of surface-disturbing incremental actions associated with consumptive uses would result in cumulative effects throughout the RFO. Each disturbed area increases the opportunity for weed invasions and disrupts the spatial continuity of vegetation communities, and hence, habitat for plant and animal species. As human access increases, potential cumulative impacts to vegetation and wildlife habitat expand.

Direct impacts would be due to loss of vegetation or habitat from livestock forage use, fires, oil, and gas and other mineral-related development, and vegetative treatments. Indirect impacts would also occur with habitat fragmentation due to development, changes in OHV use due to increased routes and the use of those routes, and revegetation efforts from rehabilitation actions. Changes in land use and ownership could result in the loss of some vegetation used for wildlife habitat. Integrated weed management would reduce the spread and potential for noxious weeds and invasive species establishment.

Past fire suppression has contributed to increasing pinyon-juniper encroachment in the decision area and to a concurrent decrease in aspen and ponderosa pine communities. Fire use and vegetation treatments under the Proposed RMP would generally maintain or improve vegetation communities by removing undesired species, increase species diversity and age class, improve vegetation composition and structure, and increase vegetation cover. In addition, vegetation treatments and range improvements on lands adjacent to the decision area (public and private) would increase available forage and water for wildlife populations and livestock (for use by private operators) in these areas. This also would improve distribution of livestock and wildlife, improving vegetation condition. These incremental impacts would result in healthier vegetation communities that are more capable of retaining moisture and nutrients and resisting disease, non-native species invasion, drought, and other natural disturbances and stressors.

Major contributors to adverse impacts include OHV activities and activities related to mineral development. The potential for adverse cumulative impacts would be greatest under DRMP/DEIS Alternatives N and A, which allow for the most acres open to cross-country OHV use and minerals development. Long-term beneficial impacts to vegetation may not be realized under DRMP/DEIS Alternatives C and D, where vegetation acres and treatment types are limited. The Proposed RMP would provide an intermediate level of protection and mitigation of cumulative impacts. The overall incremental impact of BLM activities proposed for all resource decisions on vegetation is projected to be moderate within the short term. Over the long-term, BLM activities would improve vegetation composition and wildlife habitat through vegetative fire and fuels treatments.

Cultural Resources

Incremental impacts associated with resource decisions from this Proposed RMP, combined with other past, present, and reasonably foreseeable actions including non-BLM lands, could produce cumulative impacts on cultural resources and resources of religious or traditional importance to Native American tribes. The potential for cumulative impacts includes neighboring lands with connected cultural resources, including adjoining BLM Field Offices, other federal lands, state, local and private lands within the RFO. The same general management direction and resource uses occur on all BLM- and Forest Service-managed lands. Surface-disturbing activities such as mineral development taking place across the region can contribute to cumulative impacts of cultural resources. However, these activities would require adherence to cultural resource laws and regulations, resulting in the inventory and identification of cultural sites, avoidance, and, in some cases, data recovery.

Oil and gas development and mineral exploration and development have become factors in parts of the RFO and would continue into the future, both on BLM lands under the Proposed RMP and on state, local, private and other lands. Minerals development will continue to increase the human presence in the general area, thereby increasing the risk to cultural resources from looting, vandalism, and inadvertent impacts. Unregulated uses on BLM-administered lands that could also impact cultural resources include wildfires, dispersed recreation, and cross-country OHV use. However, the cumulative impacts of these activities on cultural resources in the general vicinity of the RFO would likely be less than the potential impacts from the increasing recreational visitation that cultural sites in the region are receiving. Recreational activity in and around the RFO would continue to increase under all DRMP/DEIS alternatives and the Proposed RMP.

Management from other resource programs (VRM, non-WSA with wilderness characteristic areas, WSAs, SSS, riparian, fish and wildlife, SRMAs, and ACECs) would also provide protection from surface disturbing activities that could damage cultural resource sites. Potential congressional designation of the WSR segment would require a Class III cultural resource survey to identify and monitor cultural resources. Some cultural resources would require additional mitigation as a result of public interaction with the resource. Under the Proposed RMP, cultural resources would be managed in compliance with federal law, regulation, and policies that require the preservation of cultural resources either in place or through data recovery, which would result in minor incremental impacts to cultural resources.

Paleontological Resources

The cumulative impact analysis area for paleontological resources includes the RFO and neighboring lands with connected paleontological resources. The cumulative effects of surface-disturbing activities within areas with scientifically significant paleontological resources, especially mineral development in the region, have the potential to damage this fragile, nonrenewable resource. However, existing laws, regulations, and policies provide for mitigation of effects through avoidance or data recovery efforts. Although it is expected that some fossils would be destroyed in the course of legitimate uses of public lands, as well as by natural weathering and erosion, mitigation measures would likely bring paleontologists to areas in which fossils had not been previously studied. Thus, fossils that would otherwise have been destroyed or disintegrated over time would be collected, placed in repositories, and protected in perpetuity. Beyond mineral development, cumulative impacts on paleontological resources could occur through incremental degradation of the resource base from a variety of sources, including wildfires, dispersed recreation, and cross-country OHV use, reducing the information and interpretive potential of the paleontological resource values. This combined with the actions on BLM-administered lands could result in minor incremental impacts to paleontological resources.

Visual Resources

Past and present actions causing cumulative impacts to visual resources include various construction projects and activities on public lands (or visible from public lands due to proximity and topography), including fire suppression, vegetative treatments, prescribed burns, residential development, farming, and mineral exploration, development, and extraction. All of these activities produce surface disturbances and are examples of the types of activities that have created visual contrasts in the past and have resulted in contrasts of texture, form, line, and color that are often visible to the casual observer at varying distances. Reasonably foreseeable future actions in the RFO include these same types of actions, which would continue to create visual contrasts within the landscape.

Recreational opportunities and use are also expected to increase, including OHV use, backcountry camping, mountain biking, rock climbing, and on-road sightseeing, with expected increased visitation to the adjacent national parks and national forests. Other foreseeable future increases include the demand for recreational facilities, and mineral exploration, development and extraction, including oil and natural gas well drilling.

The potential cumulative impacts of DRMP/DEIS Alternative N combined with past, present, and reasonably foreseeable future actions on visual resources could adversely affect visual resources and scenic quality from increasing minerals and recreation-related surface disturbances and from wildfires. However, mitigation would likely limit the impacts in viewsheds with high scenic quality in the RFO and in the adjacent national parks and national forests.

Past and present management, and reasonably foreseeable future actions, combined with the proposed action alternatives (the Proposed RMP, DRMP/DEIS Alternatives A, C, and D), would reduce the

potential for cumulative impacts on visual resources and preserve scenic quality. The risks of wildland fire would be reduced within the RFO and on adjacent national forests through increased vegetation treatments to reduce fuel loads; recreation activities and off-road travel would be managed to limit surface disturbances by greatly reducing areas open to OHV use, so that areas inventoried as having high scenic quality would be preserved. Mineral exploration, development and extraction, including oil and natural gas well drilling, are expected to increase over the next 15 years to 20 years, but visual resource management and associated mitigation would likely limit the impacts in viewsheds with high scenic quality and in the adjacent national parks and national forests. Visual resource management would include conformance of minerals exploration and development activities with VRM class objectives, which would preserve scenic quality in the long term in areas that the plan has designated for scenic quality protection.

The overall contribution of the Proposed RMP to the cumulative impact on visual resources is expected to be a minor incremental increase to the visual disturbances as a result of mineral resource development, transportation, wildland fire and vegetation treatments. Additionally, there would be incremental increases in the areas managed to protect visual resources.

Special Status Species

Cumulative effects include other future federal, state, tribal, local, or private actions that are reasonably certain to occur in the planning areas. The Richfield planning area is interspersed with parcels of non-BLM managed lands including federal, tribal, state, and privately owned lands. Activities taking place on these lands do have the potential to cumulatively impact natural resources within the planning area.

Existing and proposed activities on non-federal lands in the planning areas that have the potential to cumulatively affect SSS include:

- Non-discretionary livestock grazing
- Non-discretionary OHV use
- Non-discretionary land development
- Non-discretionary development of energy and mineral resources
- Non-discretionary herbicide and insecticide treatments
- Other non-discretionary surface disturbing activities.

As public lands within the Richfield planning area are interspersed and bordered by federal, tribal, state, and private lands, activities within these non-BLM managed lands are likely to affect natural resources within BLM managed areas. Future land uses within these tribal, state, and private lands are likely to include water development (dams and irrigation projects), energy and mineral development, livestock grazing, recreational development and use, and wildlife habitat management. Of these, energy and mineral development and livestock grazing on state and private lands represent a significant source of future activity within the state of Utah. Quantified data on the existing and future extent of these land uses are not available, but moderate to detrimental at localized areas impacts are reasonably certain to occur. Where these existing and future activities on non-BLM lands that interface with the SSS habitats, they would cumulatively add to the impacts of activities authorized in the planning area.

The contribution to the overall cumulative impact from the Proposed RMP would result in some increased level of cumulative impact greater than those non-discretionary actions alone. All future BLM-authorized management actions and developments would consider the cumulative impact of project implementation in conjunction with identified project-level and site-specific parameters. This would include the analyses of non-federal actions in the action area, and would provide a more meaningful cumulative impact

analysis than can be provided at the LUP level. Some SSS may be pushed closer to listing or extinction as a result of the cumulative degradation of BLM lands.

Some beneficial impacts would be obtained through the conservation measures identified in Chapter 2 of the PRMP/FEIS. The BLM- committed conservation measures have been developed in coordination with the USFWS, and are considered to be committed mitigation on the part of BLM. In addition, several best management practices (BMPs) which are optional measures that would further protect and conserve listed species when implemented. Implementation of these measures would provide flexibility of management, and more practicality in implementing protective measures for the conservation and recovery of listed species.

Fish and Wildlife

Cumulative effects include other future federal, state, tribal, local, or private actions that are reasonably certain to occur in the planning areas. The Richfield planning area is interspersed with parcels of non-BLM managed lands including federal, tribal, state, and privately owned lands. Activities taking place on these lands do have the potential to cumulatively impact natural resources within the planning area.

Existing and proposed activities on non-federal lands in the planning areas that have the potential to cumulatively affect SSS include:

- Non-discretionary livestock grazing
- Non-discretionary OHV use
- Non-discretionary land development
- Non-discretionary development of energy and mineral resources
- Non-discretionary herbicide and insecticide treatments
- Other non-discretionary surface disturbing activities

As public lands within the Richfield planning area are interspersed and bordered by federal, tribal, state, and private lands, activities within these non-BLM managed lands are likely to affect natural resources within BLM managed areas. Future land uses within these tribal, state, and private lands are likely to include water development (dams and irrigation projects), energy and mineral development, livestock grazing, recreational development and use, and wildlife habitat management. Of these, energy and mineral development and livestock grazing on state and private lands represent a significant source of future activity within the state of Utah. Quantified data on the existing and future extent of these land uses are not available, but moderate to detrimental at localized areas impacts are reasonably certain to occur. Where these existing and future activities on non-BLM lands that interface with the fish and wildlife habitats, they would cumulatively add to the impacts of activities authorized in the planning area.

The contribution to the overall cumulative impact from the Proposed RMP would result in some increased level of cumulative impact greater than those non-discretionary actions alone. All future BLM-authorized management actions and developments would consider the cumulative impact of project implementation in conjunction with identified project-level and site-specific parameters. This would include the analyses of non-federal actions in the action area, and would provide a more meaningful cumulative impact analysis than can be provided at the LUP level.

Some beneficial impacts would be obtained through the conservation measures identified in Chapter 2 of the PRMP/FEIS. The conservation strategy also includes those BLM- committed conservation measures which have been developed in coordination with the UDWR. In addition, several best management practices (BMPs) which are optional measures that would further protect fish and wildlife species when

implemented. Implementation of these measures would provide flexibility of management, and more practicality in implementing protective measures for the conservation and recovery of listed species.

Wild Horses and Burros

Cumulative impacts on wild horses and burros would result from vegetation removal, surface-disturbing activities, and general human disturbance from increased recreation use. The conversion or sale of State Trust lands that would include development within or adjacent to the Canyonlands HMA could result in reduced vegetation for wild horses and burros and additional disturbances from human activities. Land acquisitions by the BLM for the purposes of maintaining vegetation and wild horse and burro habitat could increase the potential to mitigate degradation of habitat, especially where such acquisitions by the BLM would result in large contiguous blocks of public land. The overall cumulative effect on the wild burros has been an increase in herd size exceeding previous forage allocations. The Proposed RMP would incrementally benefit the herd by allocating 600 AUMs for wild burros.

Fire and Fuels Management

Effects on fire frequency, intensity, and suppression activities resulting from actions taken by the BLM within the RFO would combine with similar effects caused by activities sponsored by other groups and private interests to create cumulative impacts to fire management. As development, recreational activities, and general use of the area increases, so would the number of potential ignition sources and consequently the probability of wildland fire occurrence, which would increase the need for federal, state, and local agencies to suppress wildland fires to protect life, property, and sensitive resources. Development of the area would also increase the amount of Wildland Urban Interface (WUI) areas, which would put additional pressure on fire suppression efforts, as these areas are high-priority areas for fire suppression. Suppression activities within WUI areas could be more dangerous, time-consuming, and expensive than suppression in undeveloped areas. Additionally, activities associated with fire suppression, recreation, development, and general land use would cumulatively contribute to the modification of the composition and structure of vegetation communities and increase the spread of noxious and invasive weeds. Such effects would, in turn, alter the fire regime of the planning area, potentially increasing the frequency, size, and intensity of wildland fires. Developed areas and associated roads and ROW corridors could also provide increased accessibility to remote areas for fire suppression equipment and provide fuel breaks in the case of wildland fire events. The Proposed RMP management actions would incrementally modify and improve the composition and structure of vegetation communities and move the decision area's fire regime towards condition Class I.

Areas with Wilderness Characteristics (Wilderness, WSAs and Non-WSA Lands with Wilderness Characteristics)

The cumulative impact analysis boundary for areas with wilderness characteristics (designated wilderness, WSAs, and non-WSA lands with wilderness characteristics) includes areas within the planning area with identified wilderness characteristics and those areas that overlap outside the planning area. In addition, areas with wilderness characteristics of adjacent land management agencies were considered as cumulative management of adjacent lands described above. Using this criteria, there are 4.3 million acres of designated wilderness, BLM WSAs and NPS administratively endorsed wilderness and non-WSA lands with wilderness characteristics being carried forward in the Proposed RMP.

As a result of implementing the management prescriptions under the Proposed RMP, wilderness characteristics on approximately 78,600 acres of areas with wilderness characteristics would be protected, preserved, and maintained within the decision area. Because of BLM WSA management, management of existing wilderness by the BLM and management of lands administratively endorsed for wilderness by

the NPS, the cumulative effect would be the protection of wilderness characteristics on 4.3 million acres throughout the region (all areas except wilderness characteristics areas within GSENM, which are not specifically managed to protect their wilderness characteristics). Not managing 604,000 acres of non-WSAs lands with wilderness characteristic areas within the RFO would contribute to a loss of areas with wilderness characteristics in the region. However, cumulatively the number of acres being protected for their wilderness characteristics in the region is much larger. In this context, the loss of wilderness characteristics of approximately 14 percent of the wilderness characteristics areas in the decision area would not result in a significant incremental loss of these resources in the region.

Preserving, protecting, and maintaining the 78,600 acres of non-WSAs lands with wilderness characteristics would enhance long-term ecological and scenic values, and generally it would maintain naturalness, solitude, opportunities for primitive recreation and special features. Managing the 604,000 non-WSAs with wilderness characteristics for other resource values could lead to long –term degradation of wilderness values on those lands.

Forestry and Woodland Products

The cumulative impacts of past, present, and reasonably foreseeable future actions would have long-term, beneficial and adverse impacts on woodland resources. Fire Management Plans for the BLM and USDA Forest Service Districts, fuel load reductions, vegetation treatments, and woodland salvaging would reduce the risks of wildland fire and long-term loss of woodland resources and productivity within the RFO. These activities (including stand thinning and salvage of dead, diseased, and infested trees) would also improve woodland resource productivity by indirectly improving woodland ecological conditions. These beneficial impacts would be greatest under DRMP/DEIS Alternative A and the Proposed RMP, which would potentially treat the most acres annually. Woodland productivity would be lost as woodlands were converted into rangeland for increased livestock forage. Cumulative travel management impacts would be beneficial to woodland resources because surface disturbance and associated soil loss would be reduced under all of the action alternatives and the Proposed RMP. Other resource use management actions could have adverse impacts on woodland resources by restricting resource harvesting (WSAs, ACECs, SRMAs, and wilderness characteristics areas) into the future. However, the area of harvesting restrictions would be relatively small compared to the area managed as open to opportunities for resource harvesting. The Proposed RMP management actions on the harvest of forest and woodland products would have a negligible incremental impact to the overall cumulative impact on the resource in the planning area.

Livestock Grazing

Cumulative impacts could result from activities on adjacent private lands, activities scheduled for SITLA lands and actions on adjacent National Forest System lands. Because livestock grazing occurs throughout the area and adjacent lands, it is reasonable to assume that impacts similar to those identified earlier in this chapter would occur elsewhere in the area.

Removal of vegetation as a result of surface-disturbing activities, the presence and abundance of grazing wildlife, and general human disturbance would result in diminished potential for livestock grazing in the planning area. Increased recreation use, urban development, and the conversion of private or Utah State Institutional Trust Lands to other uses could reduce livestock numbers and forage available for livestock by increasing soil disturbance, vegetation removal, and noxious and invasive weed proliferation. Impacts on livestock grazing could be greater near areas with high recreation use or areas developed for residential, commercial, or industrial uses. These factors could increase the demand for grazable land, which in turn could create scarcity within the RFO. However, because the amount of acres available for livestock consumption is not expected to substantially change over the life of this Proposed RMP, this

increased demand would not result in a decrease in rangeland quality in the years following the implementation of the Richfield RMP. The BLM management actions would have a negligible incremental impact to the overall cumulative impact on the resource in the planning area.

Recreation

Various past, present, and reasonably foreseeable future BLM actions have affected and will continue to affect recreational opportunities within the planning area, including mineral development, wildland fire suppression and fuels treatments, OHV travel, utility corridor development, grazing and recreational activities in riparian areas, and management within existing SRMAs and the ERMA. The increase in vehicle-based recreation and urban development and associated population growth all contribute to increased demand for recreational opportunities in the region. As a result, the planning area could experience increased recreational visitors over the life of the plan, which could degrade certain recreational settings, resulting in diminished recreational opportunities and experiences, or increase user conflicts associated with dispersed unconfined recreational opportunities. Similarly, increasing development or utilities within or near the RFO could degrade certain recreational settings. The increase in recreational activities is minimally a result of BLM actions. There would be a minor incremental impact to recreational opportunities and experiences from the Proposed RMP management actions.

Travel Management

The cumulative impact analysis boundary includes the planning area and immediately adjacent segments of state and local road networks including portions of Canyonlands National Park, Capital Reef National Park, Glen Canyon National Recreation Area, GSENM, Kanab Field Office, Price Field Office, Fillmore Field Office, Cedar City Field Office, Dixie National Forest, and regional State Trust Lands. These road networks include routes shared with BLM and other federal agencies and routes shared with GSENM. Past, present, and reasonably foreseeable future non-federal actions have affected, and will continue to affect, travel management within the planning area. These actions, which include urban development patterns, the continuing growth of vehicle-based recreation, planned road and highway projects, and population growth are expected to increase demand and construction of transportation routes near the RFO. Areas protected from development have guided in the past, and will continue to guide, the location and development of many highways and roads near and within the RFO. In contrast, the Proposed RMP and Alternatives A, C, and D management actions restrict travel within the RFO mostly to designated routes and very few, if any, additional routes would be developed. As a result, there could be increased concentrations of vehicles within certain areas of the RFO, that is, restricting the miles of roads open for motorized travel would be expected to increase vehicle concentrations more in the RFO than in surrounding areas that do not impose travel restrictions. Management actions that restrict OHV use would limit the degree of travel opportunities and the ability to access certain portions of the planning area. The Proposed RMP management actions for closing 99 percent of the decision area to cross-country OHV travel in combination with similar management actions of adjacent field offices and agencies would incrementally reduce opportunities for cross-country OHV travel. Other Proposed RMP management actions that could affect travel management would include the construction of routes for fire and fuels management to reduce the risks of wildland fire, vegetation treatments to control invasive species, new minerals exploration and development routes, managing for increasing recreational demand and visitation, and other changes in travel management. However, these incremental actions would likely be minor to the overall cumulative effect.

Lands and Realty

The number of land use authorizations, particularly ROWs and permits, is a function of demand for these uses. Additional future development of adjacent federal, state, and private lands would likely result in

additional requests for and approval of land use authorizations for facilities such as roads, utilities, and communication sites. City and county use plans generally encourage land development adjacent to BLM lands.

Restrictions on ROWs and utilities near the RFO could result from areas protected as open space, such as Canyonlands National Park, Glen Canyon National Recreation Area, and state parks. This could result in increased concentration of ROWs for utilities on public lands within the RFO. Sales or exchanges of state lands could result in extensive changes to surface management within the RFO. If the BLM acquired non-federal lands, the demand for both major utilities and smaller-scale distribution utilities could decrease over time because the potential for development of those lands (and the associated need for utilities) would decrease. In contrast, the BLM likely would need to issue increased ROWs to new areas if state lands were sold to private parties for future development.

The designation of ROW avoidance and exclusion areas on BLM lands, along with similar restrictions on ROW development on adjacent lands, particularly National Forest lands, would have a cumulative impact of reducing routing options for ROW facilities such as utilities and roads. Under the Proposed RMP, restrictions on ROWs in the decision area, combined with restrictions form other management plans in the planning area, would have a minor incremental effect by limiting the location of the ROW. DRMP/DEIS Alternatives C and D have the most avoidance and exclusion areas, with the least being in DRMP/DEIS Alternative A and the Proposed RMP.

Minerals and Energy

The cumulative impact analysis boundary for minerals and energy resources varies by the type of minerals resource. The analysis boundary for oil and gas is the RFO and contiguous geological structures and oil and gas fields that intersect the RFO. The analysis boundary for coal is the RFO and the boundaries of adjacent coal fields. The analysis boundary for locatable minerals is the RFO. The analysis boundary for salable minerals is the RFO and adjacent mineral material sources. Under the Proposed RMP, exploration and development of the various categories of minerals would be conducted in accordance with established rules and regulations in a program that allows for reasonable access to lands and provides protection for other natural resources. The primary impact to other resources would be the potential additional surface disturbance over the reasonably foreseeable future. Over the long term, most of these incremental impacts can be mitigated. BMPs would also reduce the incremental impact on other natural resources.

The development of oil and gas in the RFO could increase over the next several years. Stipulations on oil and gas leasing in the Proposed RMP would have a minor cumulative effect on the ability to develop oil and gas resources. Closing WSAs and the five mile stretch of WSR would preclude oil and gas leasing altogether. Applying NSO stipulations in order to protect some SSS, non-WSAs lands with wilderness characteristics, ACECs, Bull Creek Archeological District, part of the Dirty Devil SRMA, sensitive soils, riparian areas and recreation sites would likely incrementally impact or prevent some oil and gas recovery and could increase development costs. Applying CSU on the part of the Dirty Devil SRMA, some SSS, crucial mule deer, elk, bison, bighorn sheep, pronghorn, raptor habitats and protect sensitive soils would result in incremental impact or an increased cost to development and reclamation activities. Added cost associated with special leasing stipulations may lead to lower bids on lease parcels. Timing limitation stipulations incrementally impact or affect exploration and drilling operations by causing delays in operations, which may affect internal company project funding. However, adequate industry planning could substantially reduce this type of impact. Two or more timing stipulations, having different overlapping dates that encompass the same parcel could cause significant financial impact, depending on the total length of time the operations would be delayed.

Continued development along U.S. Highway 89, State Highways 12 and 24, and in local communities could increase the demand for mineral materials. Mineral material closures in the RFO would have a minor cumulative effect on the ability to develop mineral materials in the Proposed RMP. The application of surface stipulations could incrementally impact companies to look elsewhere to extract mineral materials. Suitable mineral material could likely be found in adjacent areas. However, relocating a site could incrementally impact or increase the cost of materials because of longer hauling costs. Good quality sand and gravel occurring within riparian areas would not be available for disposal actions. In addition to the above constraints, permittees would also have the incremental impacts or added costs associated with the control of fugitive dust, controlling noxious weeds, and assuring that equipment and reclamation materials are free of weeds in the weed free zone areas.

Under the Proposed RMP, restrictions and stipulations on mineral and energy development in the decision area, combined with restrictions form other management plans in the planning area, would have a minor incremental effect by limiting the timing and locations available for mineral and energy development.

Special Designations

Wild and Scenic Rivers

The Proposed RMP would recommend one segment with a tentative classification of Wild - the five mile Capitol Gorge as suitable for inclusion within the NWSRS. Impacts to the WSR would result from the river being managed to maintain its classification, free-flowing nature, and outstandingly remarkable values. Incremental impacts likely would not occur because eligible rivers are reviewed during the suitability process, and suitability is based on the environmental and economic consequences that would result from designation. Therefore, the overall cumulative effect would be minimal.

Areas of Critical Environmental Concern

The cumulative impact analysis area for ACECs is the potential ACEC boundaries. Cumulative impacts from the implementation of other federal agency and non-federal resource decisions within and outside of the RFO on currently designated and potential ACECs would be minimal, with the exception of mineral and travel management decisions. The nature of the relevant and important values associated with the potential ACECs tends to result in impacts that occur quickly but recover slowly, if at all in the case of some visual impacts, and impacts on cultural sites. As such, any impact would result in an incremental increase in the potential for irreparable damage to relevant and important values. Under the Proposed RMP, only the Old Woman Front and North Caineville Mesas would be designated; management associated with other resource program decisions would protect the R & I value, resources, processes, or systems in the other potential ACECs. Management actions of adjacent lands would incrementally protect the R & I values from irreparable damage. The relevant and important values of the potential ACECs not identified for designation would be protected through other resource decisions of the Proposed RMP, laws, rules and regulations.

Socioeconomic Environment

The boundary for cumulative impacts for social and economic conditions is the socioeconomic study area, which includes the entirety of the five-county area. Such impacts would include economic and social impacts related to short-term economic stimuli and possible short-term local community service impacts related to major construction projects and resource extraction activities in the socioeconomic study area. In addition to the SUFCO coal mine on RFO lands, such major projects would also include the possibility of additional oil and gas development and its ancillary facilities, the Westwide corridor project and development of tar sands in and adjacent to Glen Canyon. The Proposed RMP management actions would allow for the increased demand for salable minerals (sand and gravel) to complete these major projects.

The completion of these projects would indirectly allow for economic and population growth and the expansion of communities. Conversion of private agricultural lands to residential and other uses as the area grows would cumulatively add to the importance of public lands for the maintenance of the economy and culture of livestock grazing. The importance of public lands to maintenance of other local livelihoods, customs, and culture would also depend on cumulative decisions regarding management of other lands in the area, including NPS, USFS, BLM, State, and private lands.

Resource decisions from the Proposed RMP would combine with other past, present, and reasonably foreseeable actions to produce cumulative impacts to the social and economic conditions of each of the affected counties. Resource decisions could also potentially result in socioeconomic impacts to local communities. Changes in management actions that increase or decrease visitation to these areas could have beneficial or adverse impacts on the local economy, with regard to tourism-based revenue.

Mineral development outside the RFO's jurisdiction, but within or near the RFO, could also impact social and economic conditions. Under the Proposed RMP, oil and gas exploration, drilling and production would provide cumulative local economic benefits, including jobs and income. Continued livestock grazing, increased recreation and OHV recreation use, and reasonably foreseeable mineral development in the RFO, in conjunction with these activities on other lands, provides local economic benefits, including jobs and income. Mineral development, including the potential increase in uranium mining on BLM and non-BLM lands, could have short- and long-term beneficial impacts on local economic conditions with regard to employment and tax revenue. Increased mining activity could adversely impact visitor experience and recreation-related revenues, depending on the scale and location of those activities. However, uranium development is not projected to be extensive and, therefore, should not adversely impact visitor experience and recreation-related revenues. However, conflicts between these uses and user groups could occur in the long term. The Proposed RMP management actions would have a moderate cumulative effect on the overall economics of the planning area.

4.8 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Section 102(2) (C) of NEPA requires a discussion of any irreversible or irretrievable commitments of resources that are involved in the proposal, should it be implemented. An *irreversible or irretrievable commitment* of a resource is one in which the resource or its use is permanently lost and cannot be reversed (e.g., extraction of any locatable mineral ore or oil and gas or the extinction of a species).

The Proposed RMP would result in surface-disturbing activities, including dispersed recreation, recreational OHV use, fire and fuels management, mineral and energy development, livestock grazing, and infrastructure development that could result in loss of irreversible or irretrievable resources. These surface-disturbing activities may permanently alter soil, water, and vegetation, visual resources, relevant and important values, ACECs, OHV use, tentative classifications of WSR segments, and potentially damage cultural and paleontological resources.

Habitats in nonfunctional condition may sustain sufficient degradation that they may no longer be capable of being restored to original site potential. If this change results in significant soil loss through channel down-cutting or incisement, or if riparian-wetland obligate plant species are replaced by facultative or upland species, these could represent irretrievable and irreversible impacts that cannot be corrected even through costly rehabilitation efforts.

Fire suppression in low-to-mid elevation forest and woodlands has led to the accumulation of fuels and makes these forests more susceptible to stand-replacing fires. The loss of forest products from stand-replacing fires is considered an irreversible, and in some instances, irretrievable commitment of resources if an extremely hot fire burned over a long time. If aspen continue to decline in the lands managed by the RFO, they could become rare to non-existent in some watersheds and might not be able to be restored.

Lands and realty policies may lead to irretrievable commitments of resources. This includes disposals of land and subsequent development and acquisition of land that results in removal of that land from the private property tax base.

Development of up to 454 oil and gas wells and leasable minerals over the next 15 years would represent an irretrievable commitment of nonrenewable fossil fuels. The extraction of locatable mineral resources also constitutes an irretrievable commitment of resources.

4.9 UNAVOIDABLE ADVERSE IMPACTS

Section 102(C) of NEPA requires disclosure of any adverse environmental effects that cannot be avoided should the proposal be implemented. Unavoidable adverse impacts are those that remain following the implementation of mitigation measures or impacts for which there are no mitigation measures. Implementing the Proposed RMP would cause some unavoidable adverse impacts.

Surface-disturbing activities could cause unavoidable adverse impacts. Although these impacts are mitigated to the extent possible, unavoidable damage is inevitable. Conversion of vegetation resources to other uses, such as transportation and mineral and energy development, reduces the quantity of vegetation resources. Energy and mineral resource extraction on public lands potentially creates air quality, water quality, visual intrusions, soil erosion, and soil compaction problems. Portions of the resource area with more intense recreational use experience scarring, increased soil erosion, and loss of vegetation. Although these impacts are unavoidable, they are usually concentrated in previously disturbed areas, which reduce the spread of impacts to more remote or less frequented areas.

Because some specific wildlife habitats coincide with the known areas of oil and gas potential, impacts to these habitats are unavoidable under current BLM policy to encourage responsible oil and gas development. However, oil and gas well sites and their associated infrastructure are mitigated to the extent possible to minimize impacts and avoid wildlife habitat values when possible. Competition is anticipated for habitat resources between wildlife, livestock, and wild horses and burros. The extent of the impacts varies by season as well as by drought cycle. Although there could be short-term periods of significant impacts, long-term management would endeavor to make these uses compatible to the extent possible.

Travel on or off roads could cause soil compaction and loss of protective vegetation cover, thereby increasing soil erosion and fugitive dust emissions. Increased soil erosion can adversely impact riparian-wetland areas through increased soil sedimentation. Weeds introduced by these and other management activities could cause a reduction in canopy coverage and leave soils subject to increased erosion as well. Any facility developments, including but not limited to recreation sites, livestock water and other range improvements, and utility and road facilities, that are not properly restored even after mitigation measures are applied, could result in increased soil erosion.

Inadvertent damage to, or loss of, cultural and paleontological resources from increased recreational use, OHV use, surface-disturbing activities, or natural deterioration is unavoidable. Although mitigation measures could be implemented for scientific data recovery (leaving portions of cultural resource sites undisturbed for future exploration), the area of excavation would be destroyed and future research would not be possible. The number of cultural sites or paleontological localities anticipated to be inadvertently damaged is unknown, but it is anticipated to be very low given the management decisions in the Proposed RMP.

Conflicts between user types, such as motorized recreationists and recreationists who seek more primitive types of recreation and motorized users who share recreation areas, are unavoidable adverse impacts. As recreation demand increases, recreational use disperses to other areas of the lands managed by the RFO, which could create conflicts with existing uses of those areas. Increasing recreation use can cause conflicts with other resource uses, such as livestock grazing or forest and woodland products harvest. Recreation use and experiences could conflict with the results of livestock grazing and timber harvest. Under the DRMP/DEIS alternatives in which mineral development is expected to be higher, recreational use is transferred from those areas, which would increase the extent and frequency of conflict between these incompatible user groups.

Numerous land use restrictions, imposed throughout the RFO to protect sensitive resources and other important values, by their nature, impact the ability of operators, individuals, and groups who use the public lands to do so freely without limitations. Although attempts are made to minimize these impacts by limiting the level of protection necessary to accomplish management objectives and by providing alternative use areas for impacted activities, some adverse impacts to such users are simply unavoidable.

4.10 RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES AND LONG-TERM PRODUCTIVITY

Section 102(C) of NEPA requires discussion of the relationship between local, short-term uses of man's environment and the maintenance and enhancement of long-term productivity of resources. As described in the introduction to this chapter, *short term* is defined as anticipated to occur within 1 to 5 years of implementation of the activity. *Long term* is defined as following the first 5 years of implementation but within the life of the Proposed RMP.

Management actions result in various short-term effects, such as increased localized soil erosion, fugitive dust emissions, vegetation damage, and decreased visual resource quality. Surface-disturbing activities, including concentrated recreation, recreational OHV use, mineral and energy development, range improvements and developments, and infrastructure development, result in the greatest potential for impacts to long-term productivity. Management actions and best management practices are intended to minimize the effects of short-term uses and reverse change over the long term. However, BLM lands are managed to foster multiple uses and some long-term productivity impacts could result regardless of management approach.

The short-term effects of mineral development decrease the area and productivity of potential crucial mule deer, elk, and SSS habitats. Development of roads associated with oil and gas development is possibly the greatest contributor to habitat fragmentation. However, permanent mineral development sites and their associated infrastructure are mitigated to the extent possible to minimize fragmentation and avoid the most significant wildlife habitat values. In addition, management actions to improve soil, water, riparian, vegetation, and habitat resources improve the productivity of wildlife and SSS habitats throughout the lands managed by the RFO.

Management actions that disturb soil surfaces can cause short-term impacts to riparian-wetland areas and vegetation resources by increasing soil erosion and converting areas to early seral stages. Over the long term, these management actions are likely to improve riparian-wetland areas to proper functioning condition and increase vegetation productivity.

Management actions to implement the *Fundamentals of Rangeland Health* and *Standards and Guidelines for Grazing Administration*, and the Healthy Forests Restoration Act of 2003, could affect the areas available for livestock grazing and commercial forest and woodland products harvest. In the long term, these actions are anticipated to improve vegetation and forest productivity. Maximizing short-term use of forest resources, without an increase in woodland products harvest or vegetation treatments, results in a long-term continued build-up of large fuels, which results in uncharacteristically intense wildland fires and longer fire return intervals.

Concentrated recreation use could cause some long-term impacts to soil structure and vegetation. However, concentrating recreational use in certain areas prevents these adverse impacts from extending to other areas of the lands managed by the RFO. However, increases in short-term woodland product harvest (such as pole/post, dead and down fuel collection) and forest harvests reduce the long-term buildup of large fuels.

CHAPTER 5—PUBLIC INVOLVEMENT, CONSULTATION, AND COORDINATION

5.1 INTRODUCTION

The Richfield Proposed Resource Management Plan (RMP)/Final Environmental Impact Statement (EIS) represents the efforts and involvement of a broad range of participants, including public agencies, tribal councils, and private organizations and individuals. The Bureau of Land Management (BLM) met and consulted with various federal, state, tribal, and local agencies throughout the planning process. The BLM conducted and attended many meetings throughout the planning process to keep all interested parties informed, and to solicit opinions and input germane to management of public land resources within the Richfield Field Office (RFO). The general public was also included in the planning process. All interested parties were invited into the planning process by means of various formal and informal methods, including meetings (with public agencies, tribal councils, interest groups, and individuals), scoping meetings, workshops, e-mail correspondence, and distribution of planning posts. This section summarizes these activities.

5.2 CONSULTATION

Consultation is the formal effort to obtain the advice or opinion of another agency regarding an aspect of land use management for which that agency has particular expertise or responsibility, as required by statute or regulation. Federal laws require BLM to consult with Native American tribes, the State Historic Preservation Office, the United States Fish and Wildlife Service (USFWS), and the Environmental Protection Agency (EPA) during the planning/National Environmental Policy Act (NEPA) decision-making process. This section documents the specific consultation and coordination efforts undertaken by the BLM throughout the entire process of developing the Proposed RMP/Final EIS.

5.2.1 Consultation With Native American Tribes

Regardless of whether a federally recognized tribe enters into a cooperating agency relationship, its fundamental connection to the BLM is based on tribal sovereignty, manifested through the government-to-government relationship.

BLM provides government officials of federally recognized tribes with opportunities to comment on and to participate in the development of land use plans. The BLM considers comments, notifies consulted tribes of final decisions, and informs them of how their comments were addressed in those decisions. At a minimum, officials of federally recognized tribal governments must be offered the same level of involvement as state and county officials. Land use plans and coordination activities must address the following:

1. Consistency With Tribal Plans. Section 202(c)(9) of the Federal Land Policy and Management Act (FLPMA) requires the BLM to coordinate plan preparation for public lands with plans for lands controlled by Native American tribes so that the BLM's plans are consistent with tribes' plans for managing tribal resources to the extent possible, consistent with federal law. This coordination allows the BLM and tribes to develop management prescriptions for a larger land base than either agency can address by itself.

2. Protection of Treaty Rights. Land use plans must address the protection of treaty rights assured to Native American tribes concerning tribal uses of public lands and resources (such treaty rights in the West are generally limited to Northwestern tribes that were subject to the Stevens Treaties of the 1850s).

3. Observance of Specific Planning Coordination Authorities. In addition to the FLPMA consistency provisions discussed above, land use plans must comply with the following statutes and executive orders:

- **Section 101(d) (6) of the National Historic Preservation Act (NHPA).** This act requires the BLM to consult with Native American tribes when historic properties of traditional religious or cultural importance to a tribe would be affected by BLM decision-making.
- **American Indian Religious Freedom Act.** This act requires the BLM to protect and preserve the freedom of Native Americans and Alaska Natives in exercising their traditional religions, including access to sites and the freedom to worship through ceremonials and traditional rites.
- **Executive Order (EO) 13007 (Indian Sacred Sites).** This EO requires the BLM to accommodate access to and use of sacred sites and to avoid adversely affecting the physical integrity of sacred sites to the extent practicable, permitted by law, and consistent with essential agency functions. The BLM must ensure reasonable notice is provided to tribes, through government-to-government relations, of proposed actions or land management policies that may restrict future access to or ceremonial uses of, or adversely affect the physical integrity of, sacred sites, including proposed land disposals.
- **Executive Order 12898 (Environmental Justice).** This EO requires the BLM to take into account the relevant Council of Environmental Quality (CEQ) guidelines and Department of the Interior (DOI) policies and goals.
- **Consultation Under the Endangered Species Act With Indian Tribes.** DOI's Secretarial Order 3206: American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, dated June 5, 1997, and the Endangered Species Act of 1973, requires DOI agencies to consult with Native American tribes when agency actions to protect a listed species, as a result of compliance with the Endangered Species Act, affect or may affect Native American lands, tribal trust resources, or the exercise of Native American tribal rights. Consultation under this Secretarial Order should be closely coordinated with regional or field offices of the USFWS and/or the National Oceanic and Atmospheric Administration (NOAA) Fisheries Service for game and non-game species.

Land use plans and their accompanying EISs must identify potential effects on Native American trust resources, trust assets, or tribal health and safety. Any effect must be explicitly identified and documented in the land use plan.

BLM representatives have met with several tribes to inform them of the planning process and solicit information on potential issues and concerns. The Utah Division of Indian Affairs has provided invaluable assistance to the BLM in consultation with the tribes. Tribal consultation on the RMP revision began in May of 2002 and is still ongoing. Meetings and consultation with Native American tribes and organizations are listed below.

May 2002	Hopi Tribe (Kykotsmovi, Arizona)
April 2003	Ute Tribe (Ft. Duchesne, Utah)
Feb. 13–17, 2006	Southern Ute Indian Tribe (Ignacio, Colorado)
	Ute Mountain Ute Tribe (Towaoc, Colorado)

	Navajo Nation (Window Rock, Arizona)
	Kaibab Band of Paiute Indians (Pipe Springs, Arizona)
	Paiute Indian Tribe of Utah (Cedar City, Utah)
April 19, 2006	Utah Division of Indian Affairs (Salt Lake City, Utah)
June 14, 2006	Navajo Utah Commission (Montezuma Creek, Utah)
June 15, 2006	Hopi Tribe (Kykotsmovi, Arizona)
July 26, 2006	Moapa Paiute Tribe (Moapa, Nevada)
July 18, 2006	Navajo Nation (Window Rock, Arizona)
July 19, 2006	Hopi Tribe (Kykotsmovi, Arizona)
August 30, 2006	Ute Tribe (Ft. Duchesne, Utah)
Oct. 30–Nov. 3, 2006	Ute Mountain Ute Tribe (Towaoc, Colorado)
	Southern Ute Tribe (Ignacio, Colorado)
	Navajo Nation (Window Rock, Arizona)
	Hopi Tribe (Kykotsmovi, Arizona)
	Kaibab Band of Paiutes and Southern Paiute Consortium (Pipe Springs, Arizona)
	Paiute Indian Tribe of Utah (Cedar City, Utah)
April 2–6, 2007	Paiute Indian Tribe of Utah (Cedar City, Utah)
	Navajo Nation (Window Rock, Arizona)
	Southern Ute Indian Tribe (Ignacio, Colorado)
November 5-6, 2007	Navajo Nation (Window Rock, Arizona)
	Hopi Tribe (Kykotsmovi, Arizona)
	Kaibab Band of Paiutes and Southern Paiute Consortium (Pipe Springs, Arizona)
	Paiute Indian Tribe of Utah (Cedar City, Utah)

All of these tribes and organizations expressed interest in the land use planning process and a desire to participate in the process. This participation ranges from the identification of areas important to the tribes within the RFO to being kept informed of the planning progress. The BLM made multiple visits to each tribe in an effort to keep them updated on the RMP's progress and obtain their input. Interests of the

Paiute Indian Tribe of Utah revolve around sacred and traditional use concerns in Quitchupah Canyon in eastern Sevier County. The Navajo Nation is interested in establishing a Traditional Cultural Property (TCP) in the Henry Mountains. This TCP is related to historical events significant in Navajo history concerning Kit Carson and the attempted removal and relocation of the Navajo from Arizona to New Mexico. The BLM has contacted the Navajo Utah Commission in an attempt to involve the Utah Navajo chapters and obtain input from them.

5.2.2 State Historic Preservation Office

The BLM has worked with the Utah State Historic Preservation Office (SHPO) during the planning process. Although formal consultation under Section 106 of the NHPA usually takes place during implementation, the BLM has consulted with SHPO regarding Proposed RMP/Final EIS cultural resource evaluation recommendations, before the Proposed RMP/Final EIS was issued. BLM has conducted cultural clearances on all OHV open areas in the Proposed RMP including consultation with SHPO.

5.2.3 U.S. Fish and Wildlife Service

The Utah BLM entered into a memorandum of agreement (MOA) with the USFWS to improve the efficiency and effectiveness of Section 7 consultation processes under the Endangered Species Act for RMP development. Through this MOA, the BLM agreed to promote the conservation of candidate, proposed, and listed species and to informally and formally consult and confer on listed and proposed species and designated and proposed critical habitat during planning to 1) ensure that activities implemented under these RMPs minimize or avoid adverse impacts on such species and any critical habitat; 2) ensure that such activities implemented under these RMPs do not preclude future conservation opportunities; 3) use, where possible, formal conference procedures specified in 50 Code of Federal Regulations (CFR) 402 to avoid conflicts between elements contained in the RMPs and the requirements for conservation of the proposed species and proposed critical habitat; and 4) analyze the effects of the RMPs on candidate species pursuant to agency planning requirements.

The BLM has initiated informal consultation with the USFWS. This consultation is being accomplished by meeting with the USFWS and preparing a draft biological assessment of the Draft RMP/EIS preferred alternative and the potential for beneficial or adverse impacts on threatened and endangered species. USFWS representatives participated regularly in the development of the Draft RMP/EIS. Formal Section 7 consultation will commence with the BLM's submission of a final biological assessment prepared for the Proposed RMP/Final EIS. The USFWS will respond with a biological opinion that will be included in the administrative record. Any terms and conditions identified in the biological opinion would be incorporated into the Record of Decision (ROD) for the Approved RMP.

5.2.4 Environmental Protection Agency

The Denver office of the EPA assigned a liaison to consult with the BLM on the Richfield RMP. To date, communication with EPA has been informal through phone calls and e-mails. EPA staff has also participated as members of the Air Quality Protocol Group, which includes the BLM, United States Forest Service (USFS), the State of Utah, and the National Park Service (NPS). The Richfield Draft RMP/EIS was submitted to EPA for review as required by CEQ regulations.

Table 5-1 lists the agencies that assisted with the Richfield Draft RMP. The table also gives a short discussion of the role of each agency.

Table 5-1. Coordination, Cooperation, and Consultation Actions

Agency	Coordination, Cooperation, or Consultation Role
FEDERAL AGENCIES	
U.S. Department of the Interior	
Fish and Wildlife Service	Consultation: Reviews proposals affecting threatened or endangered fish, wildlife, or plant species under Section 7 of the Endangered Species Act. Participates on Interdisciplinary (ID) Team; provides biological opinion on Proposed RMP/Final EIS.
Geological Survey	Coordination: Assigns a liaison and provides planning input.
National Park Service	Coordination: Provides planning input on issues of mutual concern. Participates on ID Team.
U.S. Department of Agriculture	
U.S. Forest Service	Coordination: Coordinates, along with BLM, on matters of mutual interest, particularly potential resource conflicts along mutual borders. Participates on ID Team.
Animal and Plant Health Inspection Service–Wildlife Services	Coordination: Coordinates annual management plan for animal damage control activities on public lands.
U.S. Environmental Protection Agency	
Environmental Protection Agency	Consultation: Reviews BLM plans for NEPA compliance. Files *Federal Register* notices.
STATE AGENCIES	
State of Utah	Cooperation: Provides information concerning environmental issues for which the State of Utah has jurisdiction by law or special expertise. Provides information from state records, including Richfield Proposed RMP/Final EIS project impacts on air quality and Class 1 airsheds, fish and wildlife, domestic livestock grazing, socioeconomic impacts, minerals, and State of Utah permitting requirements.
Governor's Office of Planning and Budget	Coordination: Provides leadership for the initiatives of the Governor— budgeting, planning, and coordinating issues by providing accurate and timely data, impartial analyses, and objective recommendations.
Utah Department of Environmental Quality (UDEQ), Division of Water Quality (UDWQ)	Coordination and cooperation: Coordinates and cooperates on water quality, development of monitoring for visibility standards and guidelines, and collection of air quality data.
Utah Department of Natural Resources, Division of Oil, Gas and Mining (UDOGM)	Coordination: Issues permits for mineral operations on federal, state, and private land. Permits are issued only after review of each mine plan. The BLM coordinates with UDOGM on mining authorization.
School and Institutional Trust Land Administration (SITLA)	Manages state school and institutional trust lands.
Utah State Forestry, Emergency Management Agency, State Fire Marshal's Office	Coordination: Coordinates forest management and fire activities on state lands adjacent to public lands.

Agency	Coordination, Cooperation, or Consultation Role
Utah Department of Natural Resources, Division of Wildlife Resources	Coordination and cooperation: Coordinates and cooperates on vegetation treatment projects, wildlife habitat management, big game herd objectives, and special status species.
Utah Department of Natural Resources, Division of Parks and Recreation	Coordination: Administers and manages state parks.
Utah Department of Transportation	Coordination and cooperation: Coordinates and cooperates on transportation planning and highway access.
Utah Geological Survey	Cooperates on data sharing.
State Historic Preservation Office	Consultation: The BLM consults with the Utah SHPO under Section 106 of the NHPA in accordance with the National Programmatic Agreement (NPA) as implemented in the Utah protocol to the NPA.
COUNTY GOVERNMENTS	
Sanpete County Sevier County Piute County Wayne County Garfield County Emery County	Consultation: The BLM consults and coordinates with counties throughout the land use planning process; counties participate in ID Team meetings and provide input on issues for which each county has special expertise or jurisdiction by law.

5.3 COORDINATION AND COOPERATION

Coordination, as required by FLPMA 43 United States Code (U.S.C.) § 1712(c)(a), involves ongoing communication between BLM managers and state, local, and tribal governments to ensure that the BLM considers pertinent provisions of non-BLM plans in managing public lands; seeks to resolve inconsistencies between such plans; and provides ample opportunities for state, local, and tribal government representatives to comment on the development of BLM's RMPs (43 CFR 1610.3-1). CEQ regulations further require timely coordination by federal agencies in addressing interagency issues (40 CFR 1501.6) and in avoiding duplication with tribal, state, county, and local procedures (40 CFR 1506.2).

Cooperation goes beyond the coordination requirement of FLPMA, entailing collaboration between the BLM and other governmental entities (federal, state, local, or tribal) to develop a land use plan and NEPA analysis, as defined by the lead and cooperating agency provisions of the CEQ's NEPA regulations (40 CFR 1501.5 and 1501.6). Cooperating agency and related roles may be formalized through an agreement.

5.3.1 Coordination With Other Federal Agencies

In developing this Proposed RMP/Final EIS, BLM coordinated with numerous other federal agencies. (Additional agencies are listed below under consultation.)

- **National Park Service:** Contacts were made early in the planning process with Capitol Reef National Park, Canyonlands National Park, and Glen Canyon National Recreation Area (NRA), the three national park units that share boundaries with the RFO. BLM staff from the Price and Richfield Field Offices met with the Capitol Reef Park Superintendent and his staff during

scoping and discussed issues of mutual concern. The land use planner and field manager communicated regularly with the superintendent throughout the process through e-mails, phone calls, and field trips. The superintendent and his staff provided invaluable advice and counsel, as well as special expertise on critical issues, including areas of critical environmental concern (ACEC) and wild and scenic rivers (WSR). Staff at Canyonlands National Park was contacted regarding Horseshoe Canyon, a detached unit of Canyonlands surrounded by public lands administered by the RFO. Glen Canyon NRA submitted formal scoping comments addressing several issues and more recently assigned a liaison to work with the BLM on the Richfield RMP.

- **U.S. Forest Service:** The RFO shares common boundaries with the Dixie, Fishlake, and Manti-LaSal National Forests. The USFS is engaged in revising land use plans for those national forests concurrent with the BLM revising its plans. Along with sharing boundaries, the two agencies share many common issues. Communication with the USFS regarding planning has been frequent and largely informal. USFS and BLM personnel reviewed a potential WSR segment that crossed national forest and public lands, and planning personnel from both agencies meet informally to better coordinate planning efforts. USFS personnel occasionally participate in the BLM's planning-related interdisciplinary team meetings.
- **U.S. Geological Survey:** The United States Geological Survey (USGS) assigned a staff specialist from its Moab office to serve as a liaison with the BLM on the Richfield Proposed RMP/Final EIS. To date, USGS has submitted formal comments on the Proposed RMP/Final EIS and provided a scientific review of a preliminary study on Mancos Shale erosion.
- **U.S. Fish and Wildlife Service:** Early in the planning process, BLM developed a Regional Consultation Agreement with the USFWS that provided for the participation of USFWS personnel on BLM interdisciplinary teams. Through this agreement, they were given an opportunity to provide input on planning issues, data collection and review, and development of alternatives. USFWS staff also provided written input on resource concerns. (Endangered Species Act consultation is discussed in Section 5.2.3 above.)

Administration of Grazing Allotments in National Park Service Units

The RFO has responsibility for administering grazing allotments within portions of Capitol Reef National Park and Glen Canyon NRA. A description of grazing within the park and recreation area and BLM's responsibilities follows.

Glen Canyon National Recreation Area

Glen Canyon NRA was established on October 27, 1972, under Public Law (P.L.) 92–593. In establishing Glen Canyon NRA, Congress directed that, "The administration of…grazing leases within the recreation area shall be by the BLM. The same policies followed by the BLM in issuing and administering…grazing leases on other lands under its jurisdiction shall be followed in regard to lands within the boundaries of the recreation area, subject to provisions of Section 3(a) and 4 of this Act." The RFO administers livestock grazing on eight allotments that occur on public land and within Glen Canyon NRA: Rockies, Sewing Machine, Waterpocket, Bullfrog, Robbers Roost, Horseshoe Canyon South, Flint Trail, and Slickrock. Horseshoe Canyon South, Flint Trail, and Slickrock allotments currently have no animal unit months (AUM) allocated for livestock grazing, and the Robbers Roost Allotment has no AUMs allocated for livestock grazing in the Glen Canyon NRA portion of the allotment. Specific management direction for livestock grazing in Glen Canyon NRA is provided for under the Glen Canyon National Recreation Area Grazing Management Plan (NPS 1999).

Capitol Reef National Park

On December 18, 1971, Congress abolished the presidentially proclaimed Capitol Reef National Monument and established Capitol Reef National Park, with its final boundary encompassing 241,904 acres (85 Stat. 639, 16 U.S.C. §273 et seq.). This act made provisions for management of grazing, trailing, and stock watering but eliminated grazing after one 10-year renewal of existing permits. P.L. 100–446 in 1988 extended grazing privileges within the park and allowed permittees who legally used park lands for livestock grazing before December 18, 1971, to continue the practice during their lifetime. The law further provided that grazing privileges would be extended for the lifetime of permittees' children who were born before the park was established.

At this time, grazing occurs on only two allotments within the park: Sandy 3 and Hartnet. The portion of the Sandy 3 allotment within the park is fenced and administered by the NPS. The Hartnet Allotment overlaps both BLM and NPS lands.

The BLM and the NPS consult, cooperate, and coordinate their efforts in the administration of grazing on the Hartnet Allotment within the park. The goal of this cooperation is to ensure that respective grazing authorizations, range improvements, allotment management plans, resource monitoring, and other grazing actions do not conflict, and to allocate resources appropriately in joint allotments. In 1995, a memorandum of understanding (MOU) was signed by managers from the NPS and the BLM to provide for a transfer of grazing management responsibilities to the park when sufficient resources, funding, and staffing were present to carry out those responsibilities. At that time, the park took over the issuance of permits for seasonal livestock trailing across its lands. In 1999, Capitol Reef assumed all administration of the Sandy 3 Allotment. The Allotment Management Plan for the Hartnet Allotment, which is currently being revised, will define each agency's roles and responsibilities. Once the plan is completed, the park will fully administer its portion of the allotment.

5.3.2 Cooperating Agencies

As discussed in Section 1.7.2, the BLM is required by law to prepare NEPA analysis and documentation in cooperation with state and local governments, and other agencies with jurisdiction by law or special expertise (42 U.S.C. 4331(a), 4332(2)). Qualified agencies, tribes, or other governments that enter into formal cooperation under this provision are called cooperating agencies. In support of the cooperating agency mandate, BLM invited local, county, state, and tribal agencies to become cooperating agencies in the development of the Richfield RMP. Seven agencies accepted the invitation to become formal cooperating agencies in developing the RMP and signed cooperating agency agreements: the State of Utah; Garfield, Piute, Sevier, and Wayne counties; and the USFWS. Emery County, outside but adjacent to the planning area, was likewise afforded cooperating agency status based on its MOU with the Price Field Office.

The cooperating agency agreements define the relationship between the BLM and the agencies in developing the Richfield RMP. As stated in the MOUs:

…BLM is required to assure the RMP complies with the Federal Land Policy and Management Act of 1976 (FLPMA), particularly Title II, Section 202, Land Use Planning, including Section 202(c)(9) that, among other things, directs the BLM to coordinate its land use planning activities with local governments, to consider local plans in developing BLM land use plans, to assist in resolving, to the extent possible, inconsistencies between Federal and non-Federal government plans, and to be consistent with state and local plans to the maximum extent, consistent with Federal law and the purposes of the Act.

Cooperating agency representatives participated regularly in the Proposed RMP/Final EIS planning process, including serving on interdisciplinary teams and subteams, and were given full access to and opportunities to comment on working documents and other predecisional information. In particular, the counties have been engaged in the travel management issues including off-highway vehicles (OHV) route inventory and designation process and, to date, have cooperated in more than 60 information sharing meetings.

The Utah Governor's Office will receive copies of this Proposed RMP/Final EIS for its use in determining consistency with state plans.

5.4 PLANNING CONSISTENCY

The BLM's planning regulations require that RMPS be consistent with officially approved or adopted resource-related plans of other federal agencies, state and local governments, and Native American tribes, as long as the guidance and RMPs are also consistent with the purposes, policies, and programs of federal law and regulations applicable to public lands.

43 U.S.C. §1712(c) (9) states that the Secretary of the Interior (through the land use plans of the federal agencies under it) shall

> coordinate the land use inventory, planning, and management activities of or for such lands with the land use planning and management programs of other Federal departments and agencies and of the States and local governments within which the lands are located.
>
> *It further states that* the Secretary shall assure that consideration is given to those state, local, and tribal plans that are germane in the development of land use plans for public lands [and] assist in resolving, to the extent practical, inconsistencies between Federal and non-Federal Government plans…

This language does not require the BLM to adhere to or adopt the plans of other agencies or jurisdictional entities, but rather to give consideration to these plans and make an effort to resolve inconsistencies to the extent practical.

The BLM is aware that there are specific county and state plan decisions relevant to aspects of public land management that are discrete from, and independent of, federal law. However, the BLM is bound by federal law. The FLPMA requires that the development of an RMP for public lands be coordinated and consistent with county plans, to the maximum extent possible by law, and inconsistencies between federal and non-Federal Government plans be resolved to the extent practical (FLPMA, Title II Sec. 202 (c)(9)). As a consequence, where state and local plans conflict with federal law, there may be an inconsistency that cannot be resolved or reconciled.

Thus, while county and federal planning processes, under FLPMA, are required to be as integrated and consistent as practical, the federal agency planning process is not bound by or subject to county plans, planning processes, or planning stipulations. The BLM will identify these conflicts in the Proposed RMP/Final EIS, so that the state and local governments have a complete understanding of the impacts of the Proposed RMP on state and local management options. A consistency review of the Proposed RMP with the state and county master plans is included in Chapter 5. In addition, the relevant goals, objectives, or policies of a county are often equivalent to an activity or implementation-level decision and not a land use plan decision. The very specific county goals would be addressed in any subsequent BLM activity or implementation-level decision.

Table 5-2 through Table 5-8 outline the planning consistency of the Proposed RMP with the approved management plans, land use plans, and controls of other agencies with jurisdiction in or adjacent to the planning area. The authorized officer will continue to collaborate with federal agencies, state and local governments, and Native American tribes on implementation of the RMP and on pursuing consistency with other plans and will move toward integration of such plans to the extent that they are consistent with federal laws, regulations, and policy directives. Additional discussion is contained in Chapter 1.

Table 5-2. Garfield County General Plan

Resources	Garfield County General Plan (1/1998)	Consistent
Solid Waste	Garfield County will develop a policy regarding the amount of solid waste it will accept from public lands and develop a fee schedule for public lands solid waste management.	N/A
Air Quality	The preservation of clean air is one of the goals of the county. Most areas are Class 2 and development is permitted.	Yes
Water Quality	The county supports using unused water resources, using existing sources in the most efficient manner, eliminating existing pollution and preventing new pollution.	Yes
Economic	The county supports aggressively pursuing coal and other mineral resource development, exploring tourism and recreational opportunities, retaining and expanding existing agricultural/timber-related businesses, increases in payments in lieu of taxes (PILT), and creating new attractions and recreational facilities. BLM/USFS land management practices should encourage economic ecological sustainability.	Yes
Land/Realty	State school land exchanges should consider future impacts on the growth of county's communities. State school land/federal land exchanges should increase "in-county" state land acreage totals or county-benefiting economic value. Existing public access to public lands should be preserved and enhanced and all RS-2477 right-of-way (ROW) should be preserved. Transfers of private lands to federal/state ownership should not result in a net "private land" acreage loss, unless they result in long-term, ongoing economic benefit to the county.	Yes
Safety	The county reserves the right to establish user fees for search and rescue activities, based on a user pay concept.	N/A
Wildlife	Wildlife numbers should be established for designated areas. The introduction of any exotic plant or animal species into the county should not take place without formal concurrence by the County Commission, and public hearings should be held. Watchable wildlife areas should be developed.	Yes
Grazing	The number of AUMs allocated should be expanded to the full carrying capacity of the forage resource.	Partial
Timber	Partnerships should be created and should promote long-term timber industry development to stabilize, maintain, and expand the industry through the combined efforts of business and the public. The county wants to ensure that forests are maintained as a	Yes

Resources	Garfield County General Plan (1/1998)	Consistent
	healthy renewable resource.	
Wild and Scenic Rivers	The county will comment on and may develop and submit designation proposals to the appropriate federal agencies.	Yes

Table 5-3. Garfield County General Management Plan Resource Management Amendment (12/2007)

Resources	Garfield County General Management Plan Resource Management Amendment	Consistent
Air Quality	Management direction for this resource/resource use has not been completed. It is intended that management direction for this resource/resource use will be completed, subject to public comment, and adopted at some point in the future.	Yes
Geology, Topography, and Climate	Management direction for this resource/resource use has not been completed. It is intended that management direction for this resource/resource use will be completed, subject to public comment, and adopted at some point in the future.	Yes
Soil Resources	Management direction for this resource/resource use has not been completed. It is intended that management direction for this resource/resource use will be completed, subject to public comment, and adopted at some point in the future.	Yes
Water Resources	Management direction for this resource/resource use has not been completed. It is intended that management direction for this resource/resource use will be completed, subject to public comment, and adopted at some point in the future.	Yes
Vegetation	Management direction for this resource/resource use has not been completed. It is intended that management direction for this resource/resource use will be completed, subject to public comment, and adopted at some point in the future.	Yes
Noxious/Invasive Weeds	Large infestations of Tamarisk and Russian Olive have impacted many of the streams, riparian areas, and groundwater resources of the county. Continued efforts are needed to completely eradicate the species and protect the area from recurrent infestations.	Yes
Special Status Species (Threatened, Endangered, and Sensitive)	Management direction for this resource/resource use has not been completed. It is intended that management direction for this resource/resource use will be completed, subject to public comment, and adopted at some point in the future.	Yes
Fish and Wildlife	Management direction for this resource/resource use has not been completed. It is intended that management direction for this resource/resource use will be completed, subject to public comment, and adopted at some point in the future.	Yes
Forage	It is the county's position that forage allocations be balanced between competing users based on fair and equitable assumptions and considering local goals and desires. Perhaps the greatest concern is that there needs to be a clear	Yes

Resources	Garfield County General Management Plan Resource Management Amendment	Consistent
	understanding is needed of much how forage is available to be allocated between livestock and wildlife, and how much of that forage goes to each.	
Wildland Fire Ecology	Management direction for this resource/resource use has not been completed. It is intended that management direction for this resource/resource use will be completed, subject to public comment, and adopted at some point in the future.	Yes
Cultural Resource Management	The county identifies several desired conditions and policies related to improving inventory, completing compliance in a timely manner, retaining existing resources, constructing a curation facility, capitalizing on economic opportunities associated with research and identification (etc), and issuing permits.	Yes
Paleontological Resources	The county identifies several desired conditions and policies related to improving inventory, completing compliance in a timely manner, retaining existing resources, constructing a curation facility, capitalizing on economic opportunities associated with research and identification (etc), and issuing permits.	Partial
Visual Resources	Each federal agency has its own system for classifying visual resources and for scenery management. No two agencies are completely consistent with the county's planning efforts or expressed desires. Generally, visual classification areas are more restrictive than needed outside national parks and designated Wilderness**.**	No
Forestry and Woodland Products	Resource/resource use has not been completed. It is intended that management direction for this resource/resource use will be completed, subject to public comment, and adopted at some point in the future.	Yes
Transportation	County desired conditions and policies include resolving issues in a timely manner, preserving access to public and private lands, recognizing the transportation network, resolving RS-2477 issues, incorporating sufficient scope to reduce additional analysis, eliminating the unauthorized use of cross-country travel on public and private lands and working cooperatively with federal agencies to resolve valid existing rights, transportation needs, maintenance requirements, improvement projects, and other ROW and/or scope issues.	Partial
Minerals and Energy Development	Resource/resource use has not been completed. It is intended that management direction for this resource/resource use will be completed, subject to public comment, and adopted at some point in the future.	Yes
Special Designations	Current settings, need for management changes, desired conditions, policies, goals, objectives, and criteria related to special designations were described by the county. Management actions must be consistent to the maximum extent allowed by law with Garfield County's General Management Plan. Unless directed by federal or state law, management actions that are contrary to the stated positions are inconsistent with Garfield County's General Management Plan. When no body of law exists regarding land management decisions or when decisions are left	Partial

Resources	Garfield County General Management Plan Resource Management Amendment	Consistent
	to the agencies' discretion, management actions must be consistent with the positions identified in this plan.	
Wilderness	The county identifies several desired conditions and policies related to designating eligible and suitable Wilderness: releasing other lands from wilderness character; compensating the county for visitor services; basing Wilderness, primitive and non-motorized types of recreation, and non-wilderness study area (WSA) lands with wilderness characteristics areas on county approved designations; and developing BLM lands not designated as Wilderness to the maximum allowed by law for commodity production and socioeconomic growth.	No
Research Natural / Geological / Botanical Areas	The county identifies several desired conditions and policies related to these lands before designations are made: the proposal needs to meet the county's identified criteria; a thorough inventory needs to be made to consider whether a similar area is already being protected; these areas need to be consistent with the county's plan and, absent federal law to the contrary, be subject to local law, ordinance, or other special consideration; and areas need to be limited to only those areas that can provide significant scientific information and interpretive opportunities while preserving the custom and culture and enhancing the socioeconomics.	N/A
Scenic Byways/Highways	It is the objective of the county to promote these designations as showcases of multiple use and to oppose management of adjacent lands that is inconsistent with the Garfield County General Management Plan. It is the policy of Garfield County to cooperate with other agencies to determine the demonstrated need and the minimum land necessary to accomplish desired outcomes. It is the policy of Garfield County to support only scenic highways that are consistent with local bodies of law, ordinances, plans, and are the subject of a cumulative environmental review, which determines the impact to local and regional environments and social and economic impacts caused by the designation.	Yes
Areas of Critical Environmental Concern	The county will be proactive in the management of ACECs. Approximately 1,041,245 acres of Garfield County's 3,331,065 acres are included in Bryce Canyon National Park, Capitol Reef National Park, Canyonlands National Park, Glenn Canyon National Recreation Area, and the Grand Staircase/Escalante National Monument. In addition, the USFS manages one designated Wilderness Area. It is the county's position that relevant/important scenic, cultural, and recreation lands (approximately one-third of the county) are already protected. The county will support only those ACEC designations that can be demonstrated to have relevant and important values as defined herein that are being threatened with irreparable damage.	Yes
Wilderness Study Areas	It is the county's policy to support Wilderness designation for lands the county has deemed eligible and suitable for Wilderness	No

Resources	Garfield County General Management Plan Resource Management Amendment	Consistent
	under P.L. 88-577. It is the county's policy to oppose Wilderness designation and/or management for wilderness characteristics on lands the county has deemed are not eligible and suitable for Wilderness designation under P.L. 88-577. It is the county's policy, to the maximum extent allowed by law, that all lands deemed not eligible and suitable for Wilderness designation and/or management for wilderness characteristics be released from prescriptive management and returned to commodity production or multiple use/sustained yield management. It is the policy of the county to work cooperatively with land managing agencies, the State of Utah, and Utah's congressional delegation to have the lands identified through the county review, study, and recommendation process appropriately designated and managed. The county agrees that some public lands need specific restrictions, but it believes those restrictions should be the minimum necessary and should be developed in a spirit of cooperation, ensuring the greatest use and enjoyment by the public and local residents. Areas identified in the Utah BLM Statewide Wilderness Final EIS as failing to meet outstanding solitude or primitive recreation standards should not be managed for primitive or semi-primitive non-motorized recreation.	
National Trails	It is the policy of the county to consider each proposed trail on a case-by-case basis, considering other values that might be affected by designation; subject to goals and objectives of the Garfield County General Management Plan and demonstrated need including outstanding remarkable values emphasized by designation.	Yes
Wild and Scenic Rivers	It is the county's policy that, once undertaken, all WSR evaluations be completed through the suitability stage. It is the county's policy to support only those river segments that meet the quality standards set forth by the county in a public-supported process.	Yes
Backcountry/ Roadless/Primitive Areas	It is the goal of the county to work cooperatively with federal land management agencies regarding designation of backcountry/roadless/primitive areas. It is the policy of the county to manage only those areas identified in the Garfield County General Management Plan as Rec Ib—near Wilderness as backcountry/roadless/ primitive. Any deviation from the plan, without approval of the County Commission, is inconsistent with the local planning process. Backcountry/roadless/primitive areas shall be designated and managed, to the maximum extent allowed by law, in accordance with county stated desired conditions.	Partial
Special Recreation Management	It is the goal of the county to establish SRMAs only for resources that significantly enhance the socioeconomic vitality, community	No

Resources	Garfield County General Management Plan Resource Management Amendment	Consistent
Areas (SRMA)	viability, custom, and culture while expanding agency financial, infrastructure, and management support to fully develop use and enjoyment of the resource. It is the policy of the county to oppose the designation of SRMAs when management scenarios restrict use and enjoyment of resources or when financial, infrastructure, and management commitments fail to fully develop use and enjoyment of resources. SRMAs are inconsistent with primitive recreation because SRMAs require intense management, increased facilities, and investments that impact the land. These requirements conflict with the concepts of primitive recreation ("untrammeled by man," "without man's influence," and "infrequent contact with man and his influence.") SRMAs are an appropriate management tool to fulfill agency responsibility to ensure traditional, diverse recreation relating to cross-country travel and open OHV use. Failure to allocate at least 1 percent of agency land in the county as SRMAs (or other appropriate designations) for cross-country travel and/or open OHV use is considered an abrogation of recreation planning responsibility and is inconsistent with the Garfield County General Management Plan. The county will consider and support/oppose SRMA management on a case-by-case basis for lands that contain special features of recreation interest, which do not qualify for ACEC, WSR, or other special designation.	
Non-WSA Lands With Wilderness Character	The county accepts and adopts the BLM determination reached in the original wilderness inventory that these lands clearly and obviously lack wilderness character and incorporates the inventory and determinations by reference. The county adopts the determination identified on page A1, column 3, paragraph 1 of the Utah 1996 Wilderness Re-inventory that these areas do not have wilderness character on every acre. The county adopts the determination identified on A1, column 3, paragraph 1 of the Utah 1996 Wilderness Re-inventory that non-WSA lands with wilderness character located adjacent to WSAs were not evaluated. Where inconsistencies exist between the original wilderness inventory conducted as directed by Congress in response to the Wilderness Act of 1964 and Utah 1996 Wilderness Re-inventory, the county adopts the original inventory and determinations as correct, accurate, and the best/most current data. In addition, the county rejects inconsistent findings of Utah 1996 Wilderness Re-inventory as inaccurate and based on subjective, unauthorized criteria. It is the policy of the county that non-WSA lands with wilderness character be managed for commodity production or multiple use and sustained yield. Management actions must be consistent to the maximum extent allowed by law with the Garfield County	No

Resources	Garfield County General Management Plan Resource Management Amendment	Consistent
	General Management Plan, and failure to comply will be considered arbitrary and capricious.	
Visual Resource / Scenery Management	Visual Resource Management (VRM) is subjective, and discretionary management that is not consistent with the Garfield County General Management Plan fails to meet the standards required by FLPMA 202(c). It is the policy of the county that any specific action to manage or change visual management or scenery classifications comply with the Garfield County General Management Plan or be approved by the Garfield County Commission. The Garfield County General Management Plan will serve as the governing body of local law concerning the management of visual resources. Before any discretionary action can be taken or approved by federal land managers, it must be shown that the action has been subjected to direct, indirect, and total cumulative impact analysis, have the support of the local Board of County Commissioners, and be consistent with the Garfield County Resource Management Plan. Establishment of visual resource/scenery management classifications, which place restrictions on public lands without considering cumulative impacts associated with congressional designations and preservation areas (national parks, national monuments, NRAs, and designated Wilderness), is inconsistent with the Garfield County General Management Plan. The county supports the least restrictive visual resource classification allowed by law unless otherwise approved by the Garfield County General Management Plan or the County Commission. The county deems VRM scenarios that are more restrictive than the least restrictive allowed by law in conflict and inconsistent with the Garfield County General Management Plan unless authorized by the Plan or the County Commission.	No
No Surface Disturbance	The county has developed a component for surface disturbing activities as part of the Garfield County General Management Plan to provide consistency across agency boundaries. Before any action is taken that will place an area into this no surface occupancy, the following criteria shall be followed: 1. A demonstrated need; threat to human health, safety, or welfare of the human environment; or a critical environmental issue that can be managed by no other designation must exist. 2. A demonstrated need must be brought before the Garfield County Board of Commissioners for discussion. 3. Prior to a final agency action, the proposal must be brought to the attention of the Public Lands Steering Committee and local community governments, and public hearings must be held so that all aspects, issues, and concerns of local citizenry can be discussed. 4. Best management practices must be developed and an environmental document be completed, which addresses the total cumulative impacts to the biological environment and social	Partial

Resources	Garfield County General Management Plan Resource Management Amendment	Consistent
	and emotional impacts as well as the economic impacts to the local area. 5. When the process is complete, the Board of Commissioners will accept, reject, or suggest modifications to the proposal and make a final decision on which action will be in the best interest of the county. 6. That decision will be considered as final local law in Garfield County.	
Special Protective Orders	Special Protective Orders will be considered only as a management tool used as a last resort. It is the policy of the county that Special Protective Orders be used, only in areas in which there are remarkable values; a demonstrated need for the protection, safety, health, or other human needs; emergency conditions; and with the concurrence of the Garfield County Commission.	N/A
Multiagency Concerns	The Garfield County Commission is a duly elected body and represents a legal subdivision of state government. The county must be a full partner in all laws, ordinances, policies, planning, and needful decisions relating to management of public lands in Garfield County. With the increasing influx of visitors to public lands, providing public services has become increasingly burdensome. Federal and state agencies must accept their share of the responsibility for providing critical services. Managers and visitors are jointly responsible for impacts to public services. The county will classify public lands in the county consistent with federal procedures for visual resource/scenery management, recreation opportunity spectrum analysis, wise stewardship, and responsible protection of the health and welfare of the land. The county will support management of public lands in accordance with Garfield County's General Management Plan and Land Use Policy; multiple use lands administered by the Federal Government, unless specifically withdrawn through congressional mandate for specific purposes, must be managed under the principles of “multiple use and sustained yield.” Federal land managers are inconsistent with the definition of “multiple use”. Multiple use means, but is not necessarily limited to, those items historically and traditionally practiced, both consumptive and non-consumptive, which include grazing, mining, recreation, oil and gas exploration, timber production (including wood products like fence posts and firewood), wildlife, vegetative management, and water use and development. Garfield County asserts these uses are generally compatible and true “multiple use.” Management allows the land and its resources to be used for multiples uses simultaneously or in concert with each other. More than one use can occur at the same time, and many activities are mutually beneficial. Wilderness values should not be applied as suitability criteria in determining grazing capacities in designated wilderness or wilderness study areas. Standards for Rangeland Health should	Partial

Resources	Garfield County General Management Plan Resource Management Amendment	Consistent
	be used for grazing allocations. County custom, culture, and economic stability depend on agriculture, livestock production, mining, tourism, recreation, the timber industry, the continued use and availability of public lands, and accompanying resources. Federal and state management plans must identify and address the impacts their proposed management decisions and practices have on traditional resource uses, custom, and culture. Sufficient land within the county has been designated for primitive recreation and preservation purposes (parks, monuments, recreation areas, and Wilderness). The county opposes additional lands administered under single-use management schemes unless specifically approved by the County Commission. The county actively supports public land practices that provide for traditional multiple uses, support the custom and culture of the county, and enhance commodity production consistent with man's role as steward of the land. Garfield County supports motorized and non-motorized access to public lands. Access to public land has a direct impact on the county's economic stability, custom, and culture. Open access maintains stability in the county. Garfield County will participate in all relevant federal and state access decisions, including RS 2477 determinations, Title V issues, closure discussions, and transportation decisions. The county has developed a transportation system that identifies the minimum infrastructure necessary to maintain the custom, culture, and socioeconomic needs of the county. County concurrence must be sought prior to access reduction to prevent negative impacts to the sustainability of local communities. Given the importance of public land access, the county asserts roads, paths, ways, and trails constitute valid existing rights if created before the passage of FLPMA and/or enabling authority. The county declares federal actions regarding RS 2477 are unjust and illegal and have placed an unfair burden on Garfield County to protect its ROWs. Garfield County will aggressively protect its right to public access. Agencies that adopt management alternatives that impact the transportation network prior to final determination of jurisdiction fail to recognize valid existing rights. Restrictions placed on existing roads, paths, ways, and trails prior to final determinations of jurisdiction are speculative, arbitrary, capricious, and is inconsistent with the Garfield County General Management Plan.	
Livestock Grazing	Wilderness values should not be applied as suitability criteria in determining grazing capacities in designated wilderness or WSAs. Standards for Rangeland Health should be used for grazing allocations. County custom, culture, and economic stability depend on agriculture, livestock production, mining, tourism, recreation, the timber industry, the continued use and availability of public lands, and accompanying resources. Federal and state management	Yes

Resources	Garfield County General Management Plan Resource Management Amendment	Consistent
	plans must identify and address the impacts their proposed management decisions and practices have on traditional resource uses, custom, and culture.	
Lands/Realty	Sufficient land within the county has been designated for primitive recreation and preservation purposes (parks, monuments, recreation areas, and Wilderness). The county opposes additional lands administered under single-use management schemes unless specifically approved by the County Commission. The county actively supports public land practices that provide for traditional multiple uses, support the custom and culture of the county, and enhance commodity production consistent with man's role as steward of the land. Private and Public Land Ratios—Public land acreage currently owned and managed by federal and state agencies is more than sufficient for the public interest. Approximately 94 percent of the county is owned or controlled by federal and state entities. Sufficient acreage exists in the national parks system, national monument system, and other areas of special designation. The county has a "no net loss of private land" and "no expansion of national parks/monuments" position relative to federal-state property exchanges and transfers without the approval of the County Commission. The determination of "no net loss" should consider both acreage and values. The county supports a "net gain of private lands" regarding acreage and value. It is therefore the policy of the county to place maintenance and improvement of transportation facilities as a higher priority than protecting visual resources adjacent to the transportation facilities. Where existing transportation facilities are present (roads, paths, ways, trails, airstrips, trailheads, parking areas, airports, etc.), the area is considered to have enhanced visual characteristics, because the public has an opportunity to view it. Best management practices, which support appropriate visual resource objectives, will be applied to transportation maintenance and improvement projects.	Yes
Access	The county supports motorized and non-motorized access to public lands. Access to public lands has a direct impact on the county's economic stability, custom, and culture. Open access maintains stability in the county. Garfield County will participate in all relevant federal and state access decisions, including RS 2477 determinations, Title V issues, closure discussions, and transportation decisions. The county has developed a transportation system that identifies the minimum infrastructure necessary to maintain the custom, culture, and socioeconomic needs of the county. County concurrence must be sought prior to access reduction to prevent negative impacts to the sustainability of local communities. Given the importance of public land access, the county asserts roads, paths, ways, and trails constitute valid existing rights if created prior to the passage of FLPMA and/or enabling authority. The county declares federal actions regarding RS 2477 are	Partial

Resources	Garfield County General Management Plan Resource Management Amendment	Consistent
	unjust, illegal, and have placed an unfair burden on Garfield County to protect its ROWs. The county will aggressively protect its right to public access. Agencies that adopt management alternatives that impact the transportation network prior to final determination of jurisdiction fail to recognize valid existing rights.	
Recreation and Tourism	Visitors to public lands have a direct bearing on the economic well-being of the county and its communities. Visitors also impact county services including search and rescue, emergency medical, solid waste collection and disposal, law enforcement, and fire response. The county supports increased recreational activity on public lands. However, federal and state agencies must acknowledge, and more aggressively address, the impacts associated with their visitors. Federal and state land managers are jointly responsible with their visitors to compensate the county for public services. The county adopts the BLM's Final Wilderness EIS finding that primitive recreationists spend approximately $4.10 per day.	Yes

Table 5-4. Garfield County Economic Development Plan (2007)

Resources	Garfield County Economic Development Plan	Consistent
Economic Development	The county's economy has expanded from chiefly farm-based and natural resource extraction-based, to one that includes industry, retail and tourism, and other service-oriented businesses. The county must continue to seek innovative ways to diversify its economy, provide job opportunities for all county citizens, safeguard precious and irreplaceable resources, and wisely plan for change.	Yes

Table 5-5. Sevier County General Plan (12/2006)

Resources	Sevier County General Plan	Consistent
Multiple Use	In Sevier County, multiple use activities should continue and include uses such as agricultural grazing, fishing and hunting, mineral exploration and mining, recreation, wildlife habitat, and timber sales.	Yes
Livestock Grazing	Agencies should continue to promote, permit, and regulate grazing on public lands. Removing livestock should not be the only option for managing public lands for utilization. The county should support the current Public Rangelands Improvement Act (PRIA) formula for determining AUM costs for grazing on public lands. Local agricultural boards, councils, and permittees should be consulted by federal land managers to provide local input on grazing issues.	Yes
Roads/RS-2477	The county will continue the road use agreements with the BLM, USFS, and other agencies that own public and private lands so that ROWs and access to public lands are maintained. All present or expanded RS-2477 roads within the county shall be recognized	Yes

Resources	Sevier County General Plan	Consistent
	by applicable federal land management agencies.	
Vegetation and Watersheds	The county supports efforts to improve vegetative management and protect the watershed on public lands. Activities such as chaining, burning, fencing, reseeding, grazing, and others are beneficial to the watershed.	Yes
Wildlife	The county encourages the use of alternate funding sources to improve habitat. It seeks to resolve conflicts between elk habitat and livestock grazing. Managing and enhancing wildlife populations and habitat support economic and recreational opportunities for the county. The county supports reasonable wildlife management as long as it does not create a single-use status adversely impacting or limiting other resources on public lands.	Yes
Mineral Resources	The use, monitoring, permitting, or extracting of resources such as clay, coal, gypsum, salt, sand/gravel, natural stone and petroleum, gas and oil shale continues to be important to the county.	Yes
Water Resources	Management of the Central Sevier Valley and Sevier-Sigurd Basin systems, culinary springs and wells, diversions, canal and irrigation companies, water quality, and water rights continues to be a vital interest of the county.	Yes
	The county recommends that appropriate access and source protection zones continue to be closely monitored to maintain water quality.	Yes
	The county recommends that flood plain detention basins and flash flood channels be protected from development and be well maintained.	Yes
	The county will cooperate with entities to ensure that known and potential inventories of spring and well sources of culinary waters are identified and appropriately protected.	Yes
Easements/ROW	Special purpose or prescriptive easements and established ROWs for irrigation bridges, canals, and waterways will be maintained and recorded. The county recommends that easements be no greater than 30 feet and not encroach on private property. Corridors, easements, or ROWs should be maintained, preserved, protected, and recorded as development is approved in the unincorporated areas of the county.	Yes
Access	Access to natural resources will be preserved and protected. Minerals, mining and mineral-related production, and timbering will be actively extended and promoted.	Yes
Wildfire and Hazards	The county intends to adopt agreements and ordinances consistent with fire, interface, mitigation, and natural hazard codes that assist in protecting private and public property from natural hazards and wildland fires.	Yes
Hazardous Wastes	The county promotes training and strengthening the operations of public health and safety personnel to prevent the unauthorized, negligent disposal of debris, solid wastes, and hazardous or potentially hazardous wastes. The intent of this policy is to protect land resources, the visual environment, and ecology of surface	Yes

Resources	Sevier County General Plan	Consistent
	and groundwaters.	

Table 5-6. General Plan of Wayne County (5/1994)

Resources	General Plan of Wayne County	Consistent
Multiple Use	Wayne County supports preserving traditional multiple use of resources. The county feels that these uses should take precedence when conflicts between competing uses arise, i.e., wildlife vs. livestock, timber harvesting vs. recreation.	Yes
Private Property Rights	The county supports protecting private property rights, as well as county interests and values, through the development of land use regulations.	Yes
Water Rights	The county wishes to preserve and expand existing water rights.	Yes
National Park Boundaries	The county believes that national park boundaries (buffers) should not be expanded solely through national park or congressional decisions. The county desires that the federal land managers improve their coordination for decisions and practices on public lands adjacent to the park boundaries.	Yes
Tourism and Recreation	The county supports exploring tourism and recreational opportunities. The county wishes to create new attractions and recreational facilities within the county.	Yes
Livestock	BLM and USFS rangelands will be managed and improved using accepted traditional range improvement/conservation practices. The county supports maintaining the number of AUMs.	Yes
Economic	The county supports retaining and expanding agricultural businesses, specifically, livestock, dairy/cheese industry, timber-related industries, and commercial fisheries.	Yes
Wildlife	The county supports establishing and maintaining upper limits on big game herd sizes.	Yes
Lands/Realty	No net increase in federal ownership as a result of state school land/federal land exchanges within the county. State school trust sections within parks are exchanges for other federal lands within the county. No involuntary transfer of private lands to public ownership if such transfers result in a tax revenue and value loss. State school trust lands should not be consolidated; checkerboard should be maintained on BLM lands. The county supports privatization of land. Transfers of private lands to federal or state ownership should not result in a net “private land” acreage loss. The county supports pursuing an increase in PILTs by the Federal Government.	Yes
Transportation	All transportation routes on public lands, i.e., primitive ROWs, trails, roads, canals, ditches, pipelines, transmission lines,	Yes

Resources	General Plan of Wayne County	Consistent
	livestock driveways, and any other traditional use should be protected.	
Law Enforcement	The county believes that the Federal Government should cover emergency/law enforcement costs.	N/A
Forestry	The county seeks to maintain the current level of timber harvest of 4 million board feet. The county supports restructuring timber sale contracts to eliminate the discrimination of our local mills caused by the current sale size and administration.	Yes
Parker Mountain Complex	The county supports livestock grazing and the established seasons of use, allotment boundaries, numbers, and dates; controlled livestock numbers; and the protection of all water rights.	Yes
	The county supports a controlled antelope herd of 400 head and enforcing that number with hunts and trapping.	Yes
	The county supports the recognition and protection of water rights and privileges by the BLM.	Yes
	The county feels that all roads and highways, bridges, flumes, and culverts should be recognized and maintained/improved and that 60–100 foot ROWs be allowed. Obstructions or gates should not be put in place unless there is agreement by all concerned.	Yes
	Where possible and necessary, any public land needed by towns or cities for expansion purposes should be provided if it does not infringe on others with established uses.	Yes
Fremont River Complex	The county does not favor any land being designated as wilderness. The lands should be available for multiple use and production as needed.	No
	The county feels that special designations (ACEC) should not be considered and that they are too restrictive for the multiple use concept.	No
	The county feels that it does not have any rivers or streams that qualify for WSR designation and that this designation is too restrictive and interferes with upstream water rights.	No
	The county feels that any land exchange should benefit all parties and that these transactions should be brought to the attention of the Commission.	Yes
	The county believes that all historical and cultural resources should be identified, recognized, and honored.	Yes
	The county believes that salinity problems should be addressed by federal entities that possess the means to solve the problems.	Yes
	The county feels that all roads and highways, bridges, flumes, and culverts should be recognized and maintained/improved and that 60–100 foot ROWs be allowed. Obstructions or gates should not be put in place unless there is agreement by all concerned.	Yes

Resources	General Plan of Wayne County	Consistent
	The county believes all resources should be managed for the multiple use concept, grazing, mining, and timber. It also favors the current formula for establishing grazing fees on BLM and USFS land.	Yes
Henry Mountain Complex	The county feels that all WSA lands should be released immediately and opened as needed for mineral exploration.	No
	The county believes that bison are a part of the region and the herd should not exceed 200 head.	Yes
	The county believes that the BLM should be allowed to manage the NPS lands as though they were regular BLM land, except for the ACEC near the campground/visitor center.	No
	The county believes that the current bighorn sheep management should continue.	Yes
	The county believes that recreation, hunting, hiking, boating, camping, and four wheeling should be managed to protect the environment as other uses are.	Yes
	The county believes that special designations (ACEC) should occur only in the national parks. The county does not feel that the Fremont River meets the WSR criteria. The county also supports the multiple use concept relative to water rights.	No
	The county maintains that water rights and privileges be protected.	Yes
	The county feels that all roads and highways, bridges, flumes, and culverts should be recognized and maintained/improved and that 60–100 foot ROWs be allowed. Obstructions or gates should not be put in place unless there is agreement by all concerned.	Yes

Table 5-7. Sanpete County General Plan (6/1997)

Resources	County Plan Decision	Consistent
Culture, Historic Preservation, Recreation, and Tourism	Sanpete County's mission is to coordinate the efforts needed to preserve and renew the shared culture and economic and natural heritage through business and tourism development. The county supports increased commerce, travel, tourism, and other uses that are compatible with the present multiple uses. The county recognizes the preservation of its historic and cultural resources. The county wishes to preserve, protect, and promote increased use of recreation resources.	Yes
Economic Development and Employment	The county supports efforts to identify and develop resources that will provide growth and promote businesses.	Yes
Orderly Growth and Demographics	The county maintains that open lands, especially public lands, be promoted for summer and winter recreational purposes. The county wants the best utilization of natural resources, maintenance of their quality of life, and the preservation of the	Yes

Resources	County Plan Decision	Consistent
	environment.	
County, Federal, Municipal, and State Lands	The county wishes to reposition public trust lands to facilitate local development through appropriate selections and exchanges. The county maintains that all users of public land should bear a proportionate share of the costs associated with administering through uniformly applied user fees.	Yes
Agriculture, Water, Minerals, and Natural Resources	The county believes that no use, or proposed land use, should materially alter the current land ratio designed or devoted to agricultural production or use. The county requires that water rights be maintained. The county wants monitoring of agricultural or commercial activities to prevent point sources of pollution to streams and drainages.	Yes

Table 5-8. General Plan for Piute County (12/1994)

Resources	General Plan for Piute County	Consistent
Livestock	It is Piute County's desire to preserve and enhance livestock and agricultural industries.	Yes
Tourism/Recreation	It is the county's desire to strengthen its economic base by responsively developing traditional recreational uses (hunting, fishing, and camping) and popular activities (mountain biking, all-terrain vehicle [ATV] riding, cross-country skiing, and rock hounding).	Yes
Wildlife	It is the county's desire that wildlife resources be comprehensively managed to preserve and enhance economic and recreational opportunities (consumptive and non-consumptive).	Yes
Water	It is the county's interest to protect existing water rights and to pursue the acquisition of additional water rights for culinary, agricultural, and recreational purposes.	Yes
Mineral	It is the county's interest that federal and state management plans continue to provide opportunities for the growth and development of the mining industry.	Yes
Timber	The county supports responsible timber and woodland resource management.	Yes
Multiple Use/Access	It is the county's interest that BLM and USFS lands be managed for multiple use and access be maintained on public lands.	Yes
RS-2477	It is the county's wish to ensure that local input regarding access on existing roads (RS-2477) be maintained.	Yes
Wilderness Characteristic	It is the county's position that the continued expansion of proposed wilderness areas and the continually diminishing standards by which wilderness characteristics are identified will dilute the importance of the wilderness concept and destroy what should be an important and special aspect of our public lands. As indicated, the impacts on Piute County from the heavy	Yes

Resources	General Plan for Piute County	Consistent
	presence of federal lands are substantial, and any increase in the number of restrictions that result from new management protocols would be devastating to the county's economy. The county believes that the lands identified as having wilderness characteristics within the boundaries of Piute County should be managed for multiple use-sustained yield, and we believe that the data we have supplied support this position, indicate that the lands have had long and diverse use, and show that the areas that have not been impacted by use are too small to be practicably managed for their wilderness characteristics.	
A recommended proposal for amending the Piute County General Plan to clarify longstanding policies for the following regions: **Kingston Ridge** **Phonolite Hill** **Rocky Ford**	Achieve and maintain a continuing yield of mineral resources, livestock grazing, water resources, and traditional access to outdoor recreational opportunities, at the highest reasonably sustainable levels. Maintain and keep open all roads in the region that appear on Piute County's most recent transportation map and provide for such additional roads and trails as may be necessary from time to time. Manage the region to not interfere with the fiduciary responsibility of SITLA with respect to trust lands located in that region. Avoid managing part or all of the region for so-called wilderness characteristics because it would violate FLPMA, contradict the state's public land policy, and contradict the foregoing plans of Piute County for managing the region. Avoid imposing any of the ACEC designation alternatives currently under consideration in the Richfield RMP revision process, because it would contradict Piute County's plan for managing the region. Avoid including any river segment in the region in the national WSR system because it would violate the National Wild And Scenic Rivers Act and related regulations, contradict the state's public land policy, and contradict the foregoing plans of Piute County for managing the region. Assigning a VRM Class I or II rating for any part of the region would contradict the state's public land policy and contradict Piute County's plan for managing the region.	No

This PRMP/FEIS is consistent with Wildlife Management Plans, the State Water Plan, State Park Plans (Fremont Indian State Park, Piute State Park, Otter Creek State Park, Palisades State Park, and Goblin Valley State Park). Table 5-9 discusses the consistency between the State of Utah Code 63j-4-401 and the Richfield PRMP/FEIS.

Table 5-9. Consistency with State of Utah Code 63j-4-401

Resource	State of Utah Code 63j-4-401	BLM
ACECs	**State of Utah**: It is the policy of the State of Utah to withhold support for ACEC designation unless or until relevant and important values or significant natural hazards are clearly identified	**BLM**: The potential ACECs brought forward for designation into the Proposed RMP have gone through a rigorous and stringent process in accordance with

Resource	State of Utah Code 63j-4-401	BLM
	and the area requires special management protections not afforded by normal multiple-use management. ACECs should be no larger than necessary and management should be no more restrictive than necessary to prevent irreparable damage to relevant and important values or protect human safety. To the extent allowed by federal law, management prescriptions should comport with the plans and policies of the State and of the county where the proposed designation is located. These prescriptions should not result in management equivalent to that afforded congressionally designated wilderness areas.	FLPMA, the planning regulations at 43 CFR 1600, Land Use Planning Handbook (H- 1601-1), and in accordance with BLM Manual 1613 and ACEC Policy and Procedures Guidelines (45 FR 57318). Appendix 1 outlines the process the interdisciplinary team underwent to determine whether a nominated ACEC had relevance and/or importance values. The size of the proposed ACECs is limited only to the area(s) of geography where the relevance and importance values are manageable to protect and prevent irreparable damage. In the Proposed RMP, the potential ACECs generally do not have redundant special designations and/or other existing protections applied. The potential ACECs carried forward into the Proposed RMP necessitate an ACEC designation because special management protection is necessary (outside of normal multiple-use management) to specifically protect the relevance and importance values within the areas identified. The special management prescriptions that have been proposed are narrowly tailored to protect the identified relevant and important values; none of which are recognized as wilderness resources. For these reasons, the potential ACEC decisions carried forward into the Proposed RMP are considered by BLM to be consistent with Utah Code 63j-4-401.
Wild and Scenic Rivers	**State of Utah:** It is the policy of the State of Utah that federal land managers should refrain from applying a non-impairment management standard to river segments inventoried as "eligible" for inclusions in the national Wild and Scenic Rivers and all eligible segments should promptly be evaluated for suitability. The State of Utah will work with federal land managers to identify suitable segments and work towards a recommendation to congress for designation where careful analysis: (1) identifies and evaluates regionally significant segments, (2) addresses the impact designation will have on physical, biological, and economic resources, (3) demonstrates that suitable segments have water present and flowing at all times, and (4) not interfere with water resources development. Interim management of suitable segments should not interfere with development of valid existing water rights, including development of waters apportioned to the State under all interstate compacts or agreements, including the Bear River Compact and the Upper Colorado River Compact. To the extent allowable by federal law and where not in conflict with state law or policy, interim management of suitable segments and	**BLM:** The State of Utah has worked as a Cooperating Agency throughout this planning process and has been intimately involved with the BLM's wild and scenic river planning process. The State has assisted Field Office specialists to help determine eligibility findings for each of the river segments, and has provided social and economic expertise and advice as the BLM determined which eligible segments to carry forward as suitable into the Proposed RMP. BLM has committed to working cooperatively among Federal, State, and local governments and communities during the post-planning wild and scenic river study phase when statewide recommendations for inclusion of river segments into the National Wild and Scenic Rivers System would go forward to Congress. Prior to this post-planning phase, BLM would work with affected partners to help identify in-stream flows necessary to protect the outstandingly remarkable values for which the subject river segments were found suitable via this planning process. Thus, because there are

Resource	State of Utah Code 63j-4-401	BLM
	congressional recommendations for designation should be consistent with plans and policies of the county or counties where the river segment is located.	no effects of this planning decision on valid existing rights, and because suitability findings in this planning process do not create new water rights for the BLM, the land use planning wild and scenic river suitability determinations are found by BLM to be consistent with the Utah Code 63j-4-401.
Grazing	**State of Utah:** It is the policy of the State of Utah that the citizens of the state are best served by applying multiple-use and sustained-yield principles in public land use planning and management. Public lands should continue to produce food and fiber, and the rural character and landscape should be preserved through a healthy and active agricultural and grazing industry. Land management plans should maximize forage availability for domestic livestock and wildlife use. The State favors active management to restore and maintain rangeland health, increase forage, and improve watershed for the mutual benefit of local communities, domestic livestock, and wildlife. Adjustments in AUM levels may occur as required by range and watershed conditions, based on scientific, on-the-ground analysis. Grazing AUMs should be placed in suspension where range conditions will not sustain the current level of AUMs or where necessary to protect range and watershed health. Any suspended AUMs should be returned to active use when range conditions improve. The State generally opposes forced relinquishment or forced retirement of grazing AUMs but will continue to recognize voluntary relinquishments and retirements agreed to prior to RMP revisions.	**BLM:** Grazing decisions carried forward into the Proposed RMP are considered by BLM to be consistent with Utah Code 63j-4-401. Proposed RMP decisions on public lands would continue to promote a healthy active grazing industry. Forage allocations for livestock and wildlife are fully allocated on public lands. Numerous RMP decisions under other identified resources allow for the restoration and maintenance of rangeland and watershed health. For example, the Proposed RMP provides the umbrella to allow implementation-level actions for hazardous fuel reductions, fire rehabilitation, vegetation treatments, riparian improvements, range and wildlife habitat improvements, UPCD projects – including Healthy Lands Initiative projects, seed collection, etc. Minor, if any, adjustments to current permitted livestock AUMs are made in the Proposed RMP. Prior voluntary relinquishments and/or retirements have been recognized.
Wilderness Characteristics	**State of Utah:** It is the policy of the State of Utah to oppose management of public lands as wilderness except where congress designates lands as wilderness. Under State policy and FLPMA's multiple-use mandate, BLM ascribed management prescriptions for non-WSA lands inventoried as possessing wilderness characteristics should take into account the long-term needs of future generations for renewable and non-renewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife, and fish. Designation as VRM Class I, closure to oil and gas leasing, withdrawal from mineral entry, and closure to motorized and mechanized use affords protections comparable to those associated with formal wilderness designation and should be avoided for non-WSA lands with wilderness characteristics. Non-WSA lands with wilderness characteristics should be managed in a manner consistent with the multiple-use, sustained yield standard that applies to BLM lands other than	**BLM:** The Proposed RMP identifies certain "non-WSA lands with wilderness characteristics" in order to protect, preserve, and maintain their wilderness characteristics. BLM recognizes that it cannot, through the planning process, designate these lands as WSAs nor is it possible to manage them in accordance with IMP. For example, there is no provision to meet the "non-impairment criteria" mandated in IMP for WSA management. However, in following Section 201 of FLPMA, BLM has maintained its wilderness inventory and has determined that lands previously found not to possess wilderness characteristics during the FLPMA Section 603 inventory process in the late 1970's and early 1980's, now have been determined to possess them. The focus of management in the areas carried forward in the Proposed RMP is to primarily provide for an experience of solitude and primitive recreation. This is

Resource	State of Utah Code 63j-4-401	BLM
	congressionally designated wilderness or WSAs.	enhanced by maintaining the naturalness of the geographic areas. However, management prescriptions do not mirror those for WSAs or designated wilderness since these two management objectives are sufficiently dissimilar that imposing similar prescriptions would not allow BLM to meet the planning objectives outlined in the Draft RMP/Draft EIS. WSAs and designated wilderness are rights-of-way exclusion areas, closed to fluid mineral leasing by law, and do not allow for surface disturbing activities. In comparison, lands with wilderness characteristics have no set management by either law, rule, regulation, or policy. The Proposed RMP would allow for surface disturbing activities where and when they are compatible with enhancing management objectives identified in the Proposed RMP. In order to ensure that BLM's planning decisions regarding the management of wilderness characteristics are consistent with Utah law, potential adjustments may be made in the Record of Decision to nomenclature. This editorial change would not affect management or goals and objectives.
RS-2477 Assertions	**State of Utah:** The State of Utah will defend its interest, and that of its political subdivisions, in rights-of-way accepted under the self-effectuating grant process set forth in Revised Statute 2477 (repealed by the Federal Land Policy and Management Act of 1976) and SUWA v. BLM, 425 F.3d 735 (10th Cir. 2005). The State of Utah expects and requests the BLM to fully consider all information concerning individual rights-of-way submitted to BLM. Further, the State of Utah expects and requests BLM's consideration of this information as part of the preparation and implementation of Resource Management or Management Framework Plans, and preparation or implementation of Transportation Plans as part of the ongoing inventory of resources on the public lands.	**BLM:** The Proposed RMP makes no commitments with respect to any valid existing rights, particularly those concerning RS-2477. Chapter 1 of this land use plan states that resolution of this issue is outside the purview and scope of public lands planning efforts and must be adjudicated by a court of law or other legal means. Therefore, nothing in this plan extinguishes any valid rights-of-way or alters, in any way, the legal rights of the State of Utah to assert RS-2477 rights or to challenge any use restrictions imposed by the RMP that they believe are inconsistent with their rights.

The RFO RMP is consistent with the following agency plans: Dixie National Forest Plan 1997, Fishlake National Forest Plan 1996, Canyonlands National Park Plan 1994, Capitol Reef National Park Plan 1995, and Glen Canyon National Recreation Area 1999. **Comments were not received to indicate inconsistency of these plans with the draft RMP.**

5.5 PUBLIC INVOLVEMENT

The public participation process for the RMP/EIS has been ongoing throughout the development of the RMP/EIS and will continue to the ROD. It includes a variety of efforts to identify and address public

concerns and needs. In addition to formal public participation activities, informal contacts occur frequently with public land users, industry, and interested persons through meetings, field trips, telephone calls, or letters. All public participation applicable to the RMP/EIS has been documented and analyzed as part of the planning process and kept on file in the RFO.

5.5.1 Scoping

The land use planning process for the RFO formally began on November 1, 2001, when a notice announcing the "Intent to Prepare a Resource Management Plan for Public Lands and Resources in Garfield, Piute, Sanpete, Sevier, and Wayne Counties, UT" was published in the *Federal Register*. Key points regarding public involvement stated in the Notice of Intent (NOI) were as follows:

- The BLM will work closely with interested parties to identify potential management decisions that are best suited to the public's needs.
- This collaborative process will take into account local, regional, and national needs and concerns….
- This notice initiates the public scoping process to identify planning issues….
- To ensure local community participation and input, public meetings will be held….
- Early participation by all interested parties is encouraged and will help determine the future management of the RFO public lands….
- Written comments will be accepted throughout the planning process….

The NOI invited the public to nominate ACECs and WSRs, and also to comment on the "Preliminary Planning Criteria" (criteria are included in Chapter 1 of this document).

The BLM conducted a formal scoping period, which ran for 151 days, from November 1, 2001, to April 1, 2002. (The minimum requirement is for a 60-day scoping period.) Comments received during that time were summarized in the *Richfield RMP Scoping Report, July 2002* (available for review on the RMP planning web page at www.blm.gov/ut/st/en/fo/richfield/planning.html). Comments received since the scoping period closed were not summarized in the scoping report; nonetheless, they were considered in developing the Draft RMP/EIS and are included in the administrative record. Comments submitted during scoping for the Henry Mountain RMP in the early 1990s (which was never completed) were also referenced and considered in this planning process.

Scoping Public Meetings

The BLM held public scoping meetings in five Utah communities in March 2002 (Table 5-10). Registered attendance at the meetings totaled 182. The meetings were structured so that all attendees were given an opportunity to comment if they chose to do so. Five-hundred and sixty individual comments were recorded.

Table 5-10. Public Scoping Meetings

Date	Location	Attendance	Main Issues
March 12, 2002	Richfield, Utah	48	Access, recreation, OHV
March 13, 2002	Junction, Utah	28	Access, transportation, special designations

Date	Location	Attendance	Main Issues
March 14, 2002	Manti, Utah	24	Range, access, special designations
March 19, 2002	Loa, Utah	52	Special designations, recreation, OHV
March 21, 2002	Salt Lake City, Utah	30	Recreation, OHV, special designations

Written Comments

Written comments submitted during scoping totaled 1,061, including letters and cards, e-mails, faxes, and two petitions with 619 signatures. Comments were submitted from across the nation, but almost half came from Utah. Among the written comments—excluding the petitions—the top issues were wilderness and special designations. These issues were followed closely by recreation and OHV use, then range management and livestock grazing, oil and gas leasing and development and mining, and access/transportation. Access/transportation and recreation/OHVs were the big issues identified in the petitions.

Written and oral comments were compiled and analyzed in the *Richfield RMP Scoping Report, July 2002*, available online at http://www.blm.gov/ut/st/en/fo/richfield/planning.html. Selected scoping comments are included in *What You Said: Selected Comments From the Richfield RMP Scoping, August 2002*, also available online at the URL above.

5.5.2 Mailing List

An initial mailing list for land use planning was developed from existing RFO mailing lists. This mailing list has been revised and updated regularly throughout the planning process. Those on the mailing list received *Planning Posts* and other notices reporting on the progress of the Richfield RMP.

5.5.3 Planning Posts

At key points in the planning process, *Planning Posts* were issued.

- **Planning Post 1, February 2002:** Described the Richfield Draft RMP/EIS process and the reason it was needed, listed preliminary planning issues, and provided a notice of public meetings, preliminary schedule, and comment form.
- **Planning Post 2, August 2002:** Summarized the results of scoping.
- **Planning Post 3, March 2004:** Announced the extended schedule for completing the RMP, summarized the draft alternatives, described the WSR evaluation process, listed river segments found eligible in the preliminary evaluation, and invited comments on the evaluation.

5.5.4 Website

A website to provide Internet access to planning information was established early in the process at http://www.blm.gov/ut/st/en/fo/richfield/planning.html. The site serves as a repository for documents related to the RMP development that are maintained in portable document format (PDF) to ensure that

they are available to the widest range of users. The website also provides the public with the means to submit comments or add their names to the mailing list.

5.5.5 Informal Communication

In the spirit of the Secretary of Interior's "4 Cs"—communication, consultation, cooperation, all in the service of conservation—the field manager, land use planner, and other staff communicated with various individuals and groups interested in the RMP, including the following:

- Blue Ribbon Coalition
- Friends of Grover
- Southern Utah Wilderness Alliance (SUWA)
- Sportsmen for Fish and Wildlife
- The Nature Conservancy
- Utah Farm Bureau
- Utah Rivers Council
- Utah Shared Access Alliance (USA-ALL)

5.5.6 Notice of Availability of Draft RMP/EIS

On October 3, the BLM filed with the EPA its Draft RMP/EIS for the RFO. On October 26, 2007, the BLM and EPA published a Notice of Availability in the *Federal Register*, which marked the beginning of the formal 90-day public review comment period. The Draft RMP/EIS states that BLM is revising its current land use plan and proposes several alternative ways of managing public lands within the Richfield Planning Area. The Draft RMP/EIS was designed to provide a comprehensive look at the impacts to natural and cultural resources from various planning alternatives. The formal 90-day public comment period ended on January 23, 2008. The BLM provided hard copies and CDs of the Draft RMP/EIS directly to cooperating agencies; other federal, state, and local agencies; and tribal representatives. Hard copies and CDs also were made available to the public at the Richfield Field Office, the Utah State Office, and during public meetings. The Draft RMP/EIS was also available electronically on the BLM's website. In addition, the BLM widely distributed notices regarding the availability of the Draft RMP/EIS.

5.5.7 Draft RMP/EIS Public Comment Meetings

During the 90-day public comment period, the BLM held public meetings in six locations (Table 5-11) in an effort to inform the interested and affected public about the Draft RMP/EIS. These meetings were attended by 102 people and were structured in an open house format with BLM specialists available to provide information and answer questions. The public was also able to submit written comments at the meetings. The public meetings were announced in local newspapers, on the project website, and through postcards mailed to individuals on the Richfield RMP mailing list.

Table 5-11. Draft RMP/EIS Public Comment Meetings

Date	Location	Attendance
December 3, 2007	Richfield, UT	19
December 6, 2007	Panguitch, UT	5
December 10, 2007	Bicknell, UT	37

Date	Location	Attendance
December 11, 2007	Manti, UT	5
December 12, 2007	Salt Lake City, UT	26
December 13, 2007	Junction, UT	10
Total		**102**

5.5.8 Draft RMP/EIS Public Comment Response Process

During the 90-day formal DRMP/EIS public comment period, the RFO received 15,367 comments. Of these, the BLM identified 14,706 to be form letters and 661 to be unique submissions. The BLM carefully compiled, reviewed and analyzed, and addressed all of these submissions, where substantive. Comments from cooperating agencies and responses to those comments are addressed in Section 5.5.10 below. Comments and responses to other substantive comments are provided on a CD attached to this document. In addition to comments received during the formal public comment period, the RFO received additional submissions after the close of the comment period which the BLM maintains in its files.

According to NEPA, the BLM is required to identify and formally respond to all substantive public comments. The BLM developed a systematic process for responding to comments to ensure all substantive comments were tracked and the content seriously considered. A description of this system follows.

First, BLM developed a **coding structure** to help sort comments into logical groups by topics and issues. Codes were derived from resources covered in the Draft EIS or by common issues. Submissions (letters, e-mails, faxes, etc.) were given a unique identifier for tracking purposes and then each submission was carefully reviewed to capture all comments, if substantive (additional description of this process can be found below). All comments received can be tracked to the original submission.

Second, BLM created a **Comment Database**. For each comment in a unique submission, BLM captured the name and address of the commenter, assigned a code to the comment, and captured the text of all substantive comments.

The coding and comment database processes aimed at assisting the ID Team in determining whether the substantive issues raised by the public warranted modification of one or more of the alternatives or further analysis of issues and impacts. With the information provided through the public review process, the BLM reconsidered the draft alternatives, made changes as appropriate, and developed the Proposed RMP and Final EIS. Factual or grammatical errors, which led to a change in text, are not summarized but were incorporated into the Proposed RMP/Final EIS.

Finally, BLM used the comment database to prepare a narrative summary of the substantive comments. Opinions, feelings, and preferences for one element or one alternative over another, and comments of a personal and/or philosophical nature were all read, analyzed, and considered, but because such comments are not substantive in nature, BLM did not respond to them.

5.5.9 Public Comments

During the public comment period, the BLM received 15,367 comments at public meetings, by fax, by e-mail, and by regular mail from the public, cooperating agencies, other federal agencies, Native American tribes, organizations, and businesses. Where warranted, the BLM responded to substantive comments by

making revisions to the Proposed RMP/Final EIS (text changes). If no change was warranted, the BLM responded to the substantive comment in writing. The BLM considered every comment in the content analysis process, whether it came repeatedly from many people with the same message(s) or from a single person raising a technical or personal point. In analyzing comments, the BLM emphasized the content of the comment rather than the number of times a comment was received. The BLM responded to all substantive comments.

Respondents invested considerable time and effort to submit comments on the Draft RMP/EIS. Comments covered a wide spectrum of thoughts, opinions, ideas, and concerns. The most commonly addressed themes included travel, specials designations (ACECs, WSRs) and wilderness values, recreation, and minerals/energy development. While each person's viewpoint was diligently considered, the threshold analysis involved determining whether a comment was substantive or non-substantive; because NEPA requires that BLM respond only to substantive comments, BLM relied on the CEQ's regulations, to determine what constituted a substantive comment.

A **substantive comment** does one or more of the following:

- Questions, with a reasonable basis, the accuracy of the information and/or analysis in the EIS
- Questions, with a reasonable basis, the adequacy of the information and/or analysis in the EIS
- Presents reasonable alternatives other than those presented in the Draft EIS that meet the purpose and need of the proposed action and addresses significant issues
- Questions, with a reasonable basis, the merits of an alternative or alternatives
- Causes changes in or revisions to the proposed action
- Questions, with a reasonable basis, the adequacy of the planning process itself.

The NEPA handbook identifies the following types of substantive comments:

- **Comments on the Adequacy of the Analysis:** Comments that express a professional disagreement with the conclusions of the analysis or assert that the analysis is inadequate are substantive in nature but may not lead to changes in the Proposed RMP/Final EIS. Interpretations of analyses should be based on professional expertise. When there is disagreement within a professional discipline, a careful review of the various interpretations is warranted. In some cases, public comments may necessitate a reevaluation of analytical conclusions. If, after reevaluation, the manager responsible for preparing the EIS (authorized officer or AO) does not think that a change is warranted, the response should provide the rationale for that conclusion.
- **Comments That Identify New Impacts, Alternatives, or Mitigation Measures**: Public comments on a draft EIS that identify impacts, alternatives, or mitigation measures that were not addressed in the draft are substantive. This type of comment requires the AO to determine whether it warrants further consideration. If it does, the AO must determine whether the new impacts, new alternatives, or new mitigation measures should be analyzed in either the Final EIS; a supplement to the Draft EIS; or a completely revised and recirculated Draft EIS.
- **Disagreements With Significance Determinations**: Comments that directly or indirectly question, with a reasonable basis, determinations regarding the significance or severity of impacts are substantive. A reevaluation of these determinations may be warranted and may lead to changes in the Final EIS. If, after reevaluation, the AO does not think that a change is warranted, the response should provide the rational for that conclusion.

Non-substantive comments simply state a position in favor of, or against, an alternative or a management action proposed in an alternative, merely agree or disagree with BLM policy, provide information not directly related to issues or impact analyses, or otherwise express an unsupported

personal preference or opinion. For additional clarification, types of non-substantive comments are as follows:

- **Expressions of Personal Preferences or Opinion**: Comments that express personal preferences or opinions on the proposals are non-substantive and thus do not require further agency action. This includes comments in favor of or against the proposed action or alternatives, comments that only agree or disagree with BLM policy, or comments that raise, debate, or question a point of fact or policy. However, such comments are summarized whenever possible and brought to the attention of the AO.

The BLM has reviewed and considered all non-substantive comments but has not provided formal responses to such comments. Although personal preferences and opinions may be considered by the decision-maker as it chooses the final agency's preferred action, they generally will not affect the analysis. Table 5-12 and Table 5-13 include a list of the organizations and individuals that submitted substantive comments.

Table 5-12. Organizations That Submitted Substantive Comments

Blue Ribbon Coalition	Brendell Manufacturing Inc.	Bullhead 4 Wheelers
Capital Trail Vehicle Association	Coalition to Preserve Rock Art	Colorado 500
Colorado Plateau Archaeological Alliance	Congress of the United States	Dorsey and Whitney LLP
Emery County Public Lands	Garfield County	Garkane Energy Cooperative
Georgia Pacific Gypsum LLC	Glen Canyon Institute	Grand Canyon Trust
Grover Landowners	Hanks and Mortensen P.C.	Historic Restoration Blue Valley and Old Giles Town
Hoovers Cafe/Winkelman Cabins	IPAMS	Kaibab Band of Paiute Indians
Mesa Farm	Moab Friends-For-Wheelin'	MY4x4
National Outdoor Leadership School	National Parks Conservation Association	Office of the Governor
Outward Bound	PacifiCorp	Paiute ATV Trail Committee
Piute County	Public Lands Access Alliance	Public Lands Advocacy
Sanpete County/Sanpete County Courthouse	Sevier County	Sierra Club, Pennsylvania Federal Public Lands Chairman
Six-County Association of Governments (AOG)	Southern Utah OHV Club	Southern Utah Wilderness Alliance (SUWA)
Sportsmen for Fish and Wildlife (SFW)	The Nature Conservancy	Theodore Roosevelt Conservation Partnership
U.S. Environmental Protection Agency	U.S. Fish and Wildlife Service	Union Telephone Company
USDI National Park Service	USFS-Fishlake National Forest	Utah Archaeological Research Institute
Utah Back Country Pilots	Utah Cattlemen's Association	Utah Farm Bureau Federation

Utah Four Wheel Drive Association (U4WDA)	Utah Native Plant Society	Utah Professional Archaeological Council
Utah Rivers Council	Utah Rock Art Research Association	Utah State Office of Education
Utah State OHV Advisory	Walapai 4 Wheelers	Wasatch Cruisers
Wayne County	Western Land Services	Words and Photographs

Table 5-13. Individuals That Submitted Substantive Comments

George and Frances Alderson	Steve Allen	Virgil Ash
Charles Bagley	Alan Bailey	Robert Barclay
Wayne Barnes	Clotilde Barrett	Kurt Becker
David Bell	Raymond Berry	Doug Bjerregaard
Don Black	Jesse Black	Andrew Blair
Bob Brister	George and Joni Britton	Jan Burton
Robert Burwell	Chris Castilian	Charles Chappell
Kevin Croteau	Bruce Davidson	William Davis
Evan Day	Milton Derrick	Mari Dickson
Rose Diflley	Craig C. Downer	Liz Dyer
Steven Edmunds	Robert Emrich	Karen Eng-Toda
Eddie Evel	Jeffrey S. Floor	Delaina Foster
Gail Fox	Julianne French	Kent Gilbert
Robert and Arlene Glover	Tom Greene	Kent Grover
John Hall	Charles Hawley	Alex Himes
Wendy Hoff	Kevin Holdsworth	Judy Hopkins
Brian Hoth	Blair Howze	David Hubbard
Douglas Hunter	Val Hutchinson	Andrew Johnson
Blaine Johnson	Denise Johnson	Ernest Johnson
Tyler Kokjohn	Erik Larsen	Keith Larsen
Leo Leckie	Mark Luttrell	Ann MacAdam
Cindy MacDonald	Gerald MacDonald	William Mahoney
Bonnie Mangold	John Mason	Darrell McClanahan
Jean McIntyre	Norman McKee	C. Robert Mulford
Bonnie Nelson	Tracy Nielson	Todd Ockert
Jason Ogden	Glenn Olsen	Markus Opel
Paul Pace	Phillip Pace	Brian Passey
Tod Petersen	Alan Peterson	Nano and Gil Podolsky

David Potter	Phil Raider	Randy Ramsley
Max Reid	Paul Roales	Ralph Roberts
Dwayne Rowland	Charles Schelz	Cynthia Pederson and Kin Shumway
Cynthia Smalley	Allan and Thalia Smart	Charles Smith
Judy Smith	Lonney Steinhoff	Brian Swanson
Fred and Bessann Swanson	Travis M. Tams	Toni Thiriot
James Thompson	Jonathan Wallace	Lloyd V. Warner
J.B. Washburn	Mark R. Werkmeister	Jackie West
Scott Wheeler	Bruce Willock	Dorde Woodruff
Glen Zumwalt	Judy Zumwalt	

5.5.10 Summary of Public Comments

The results of the content analysis were important to the development of the Proposed RMP/Final EIS. From the nearly 15,367 total submissions that BLM received on the Draft RMP/EIS, it extracted 1,338 individual substantive comments. As required by law, BLM has summarized these comments in this Proposed RMP/Final EIS and has presented them, along with a response. The response to substantive comments is included as a CD attached to this document. Comments from cooperating agencies and responses to those comments are presented below.

Sanpete County

Comment: *Sanpete County would also encourage the development of Reasonably Foreseeable Development (RFD) Scenarios to include post-exploration development in Sanpete County that could occur over the lifetime of the plan.*

Response: The RFD considers exploration and development and the Draft RMP/EIS analyzes impacts from exploration and development.

Comment: *3. Where it makes sense and is feasible for the best use of isolated/landlocked BLM parcels, Sanpete County would support the trading/purchase/consolidation of those parcels with public stakeholders (DWR, SITLA, County, etc) in the County to protect and preserve public access to and for the best use of the resources.*

Response: The local governments were given the opportunity to identify isolated and/or uneconomical parcels that they may have interest in as part of the RMP process. The tables in Appendix 5 identify parcels that local governments desire for potential future community expansion. However, local, county, or state governments may apply for any of the parcels identified in the tables for FLPMA Section 203 sale or other public land under other current authorities for public purposes. Preference is generally given to applicants that would provide a public benefit.

Comment: *4. Sanpete County also shares the concern of the State Engineer if any valid, existing water right would be affected by BLM actions, mitigation and/or compensation actions should be negotiated with the affected parties.*

Response: BLM is obligated by law to honor valid, existing rights. Similarly, holders of valid, existing rights are obligated to honor federal laws regarding the use of federal lands for the exercise of those rights. BLM does not foresee frequent situations in which BLM's obligations under federal law would cause the agency to take actions that would prevent the holders from fully exercising their valid existing rights. BLM works diligently with the owners of valid, existing rights to prevent such situations from occurring. If the holder of a valid, existing right believes the BLM has taken an action that prevents the exercise of that right, the proper venue for determining equitable compensation or mitigation is in a court of valid jurisdiction, not within the context of a land use plan.

Comment: *5. Sanpete County is categorically opposed to any VRM I or II designations. No BLM lands in Sanpete County-or anywhere in the Richfield Field Office planning area for that matter-meet the criteria for Class I or II designations. Even with respect to the Class III designations in Sanpete County, the County is concerned in that the DRMPIEIS sets forth no criteria to support even that designation. The Class III/Class IV dichotomy for Sanpete County BLM lands appears to be subjective and lacking a basis or any criteria or application of criteria. Sanpete County is concerned that such a VRM distinction may be used as a basis for constraining or limiting surface disturbing activities which is inconsistent with the purpose of the inventory system.*

Response: The Draft RMP/EIS does not propose any VRM Class I lands for Sanpete County. The Visual Resource Inventory (VRI) was used to develop the VRM classes, with consideration from other resources and resource uses.

Comment: *6. Sanpete County also strongly recommends that the BLM seriously review the socioeconomic study currently being completed through the 6-county AOG. The current RMP undervalues the socio-economic and grazing impacts to our counties.*

Response: BLM has reviewed the Utah State University (USU), October 2006, Review of the Socioeconomic Analysis in the Draft EIS prepared by the BLM RFO, which was funded by the six-county AOG. The study expressed concerns with the socioeconomic analysis of livestock grazing, oil and gas production, socioeconomic groups (or "neighborhoods"), and OHV use for the counties. The AOG study was a critique of the original Draft EIS; the current, public Draft EIS has been modified considerably and has taken into account, directly or indirectly, many of the concerns expressed in the original AOG critique.

Sec. 1502.2, Implementation of the CEQ Regulations, sets forth how the BLM is to prepare EISs following:

"(a) Environmental impact statements shall be analytic rather than encyclopedic.

(b) Impacts shall be discussed in proportion to their significance. There shall be only brief discussion of other than significant issues. As in a finding of no significant impact, there should be only enough discussion to show why more study is not warranted.

(c) Environmental impact statements shall be kept concise and shall be no longer than absolutely necessary to comply with NEPA and with these regulations. Length should vary first with potential environmental problems and then with project size.

(d) Environmental impact statements shall state how alternatives considered in it and decisions based on it will or will not achieve the requirements of Sections 101 and 102(1) of the Act and other environmental laws and policies.

(e) The range of alternatives discussed in environmental impact statements shall encompass those to be considered by the ultimate agency decision-maker.

(f) Agencies shall not commit resources prejudicing selection of alternatives before making a final decision (Sec. 1506.1).

(g) Environmental impact statements shall serve as the means of assessing the environmental impact of proposed agency actions, rather than justifying decisions already made."

Based on CEQ Sec. 1502.2 BLM's policies and guidelines require BLM to analyze the impacts of significant differences from the current situation (i.e., the Alternative N: No Action). Given that the percent change in AUMs across alternatives is only 0.7 percent, there is no need to do the depth of livestock grazing analysis suggested by the AOG. Furthermore, the Proposed RMP shows no significant difference from the current situation, and therefore no impact from BLM decisions reached in the plan.

The BLM acknowledges the planning area contains distinct socioeconomic "neighborhoods" that likely have differential ties to the BLM lands and would likely experience differential impacts from BLM management changes. A land use plan is a landscape-level plan addressing BLM actions on the entire planning area. This focus is not intended to deny that real differences exist among the various communities and groups within the planning area. The plan takes a broader view. The BLM is unaware of any data suggesting that a "neighborhood"-level analysis would have affected the decisions reached in the plan.

Comment: *7. Sanpete County has concerns relative to cultural resources and their designation or study for designation. Some cultural resource designations may be too easily implemented with little input or coordination with the counties.*

Response: The BLM is aware that there are specific county and state plan decisions relevant to aspects of public land management that are discrete from, and independent of, federal law. However, the BLM is bound by federal law. The FLPMA requires that the development of an RMP for public lands must be coordinated and consistent with county plans, to the maximum extent possible by law, and inconsistencies between federal and non-Federal Government plans be resolved to the extent practical (FLPMA, Title II Sec. 202 (c)(9)). As a consequence, where state and local plans conflict with federal law, there will be an inconsistency that cannot be resolved or reconciled. Under 36 CFR 800.2(4)c(3) the county can request to be a consulting party during the Section 106 process and help determine site eligibility, effects and mitigation.

Thus, while county and federal planning processes, under FLPMA, are required to be as integrated and consistent as practical, the federal agency planning process is not bound by or subject to county plans, planning processes, or planning stipulations. The BLM has identified these conflicts in the Proposed RMP/Final EIS, so that the local governments have a complete understanding of the impacts of the Proposed RMP on state and local management options. A consistency review of the Proposed RMP with county master plans is included in Chapter 5. In addition, the BLM has worked closely with the counties as a cooperating agency on the current planning effort, including attending alternative development meetings and reviews of various drafts. The BLM will maintain close coordination with the counties so management of cultural resources on public lands is as consistent as practical, while complying with all federal laws and regulations regarding protection of cultural resources.

Comment: *The DRMP/EIS should be modified to expressly provide for seismic and other exploratory activities to occur on Sanpete County BLM lands.*

Response: The Draft RMP/EIS allows for seismic and other exploratory activities.

***Comment**: The County requests that the BLM recognize the routes already submitted by the County and also those established in the County transportation plan to be completed and amended to the County general plan.*

Response: The County routes provided in GIS were used to augment BLM's route inventory. This information was used in making route designations, using the process described in Appendix 9.

***Comment:** 11. The transportation plan that is included in the RMP should require the Richfield Field Office to do on-the-ground truthing of routes. The inventory of routes in Sanpete County is incomplete. the inventory process should be ongoing both for adding routes to and subtracting routes from the inventory in cooperation with Sanpete County.*

Response: The BLM has crafted language for this and has been added to the Proposed RMP/Final EIS. Under Management Actions Common to All Alternatives, travel routes can be added or deleted from the Travel Plan based on public demand or unacceptable impacts to resources. This action would be based on monitoring and site specific NEPA analysis.

***Comment:** The County requests that the Richfield Field Office use flexibility in identifying seasonal closures of routes again in cooperation with the County as need and reasons change over time.*

Response: The BLM has crafted language for this and has been added to the Proposed RMP/Final EIS. Under Management Actions Common to All Alternatives, travel routes can be added or deleted from the Travel Plan based on public demand or unacceptable impacts to resources. This action would be based on monitoring and site specific NEPA analysis.

***Comment:** 13. Sanpete County has serious concerns regarding the designation of the limited number of acres as open under Alternative B. Currently 78% of the RFO lands are open for public travel. It is obvious additional restriction of travel from open (cross country) to designated roads and trails is needed. However, Alternative B recommends only 8,400 acres of open lands, or 0.4%, a decrease of 192 times. Some 1,900 acres are in Sanpete near Mayfield. Such a reduction will concentrate open riders in a few isolated areas, creating additional management problems and over utilizing the ground. It is important to provide recreational opportunities for one of the fastest growing and largest recreational use by the public. Many of the open areas included in Alternative A should be considered with Alternative B, especially Factory Butte, Big Rocks, Sahara Sands, Gunnison Reservoir, Fayette Play Area, and Salina to Mayfield as appropriate.*

Response: The Draft RMP/EIS considered a range of alternatives that included open OHV use in 1,636,400 acres to no cross-country OHV use. This range of alternatives included Factory Butte, Big Rocks, Sahara Sands, Gunnison Reservoir, Fayette Play Area, and Salina to Mayfield as open OHV areas. The Proposed RMP would designate the following areas as OHV open areas: Factory Butte (8,000 acres), Big Rocks (90 acres), Glenwood Play Area (1,000 acres), and Aurora Play Area (300 acres). BLM would close the Mayfield OHV open area in the Proposed RMP to protect rare plants.

***Comment:** 15. Sanpete County recommends that Alternative A (300 feet of centerline) for vehicle access to campsites in OHV limited areas be used; additionally, access to current established campsites that go beyond the 300 foot limit should be included on the travel map for ingress and egress access to these dispersed campsites as identified through on-the-ground inventory and truthing.*

Response: The management suggested within the comment was included within the range of alternatives. Many routes which provide access to campsites have been identified and would be designated routes. Appendix 9 provides criteria to consider the addition of designated routes in future if necessary to better address resources and resource use conflicts.

Comment: *18. Desired outcomes do not list land management strategies that will increase water retention and production. Sanpete County believes such direction should be provided in the RMP and Management Action listed that will increase beneficial water production.*

Response: The Federal Government has delegated the authority to allocate water within state boundaries to state governments. This means that even though BLM is a federal agency, it must seek water rights from state governments to obtain and provide water for BLM uses. Increases in water production need to be addressed by the State Engineer and/or the Utah Division of Water Resources.

Comment: *22. The County would also be opposed to the trading/redesignation of AUMs for the introduction of Big-Horn Sheep. Similarly, in a revisit of the grazing alternatives summary chart, it appears there is a direct conflict in the goals for wildlife and Big Horn Sheep compared to no changes in the AUMs. Additionally, it is not clear whether alternatives B, C, and D hold permitted use constant for each allotment or whether reallocation of AUMs between allotments would occur without changing the overall number of AUMs.*

Response: Bighorn sheep were addressed in the multiagency Big Horn Sheep Habitat Management Plan. This plan addresses the area east of Capitol Reef National Park. Bighorn sheep have not been identified for introduction in Sanpete County because of lack of appropriate habitat and the financial impact it would make to the large domesticated sheep industry in the county. Concerning the level of permitted use in Alternatives B, C and D, there is no reallocation of AUMs, except for the Robbers Roost Allotment, as described in Appendix 7 of the Draft RMP/EIS.

Comment: *Dictating changes in the seasons of use from the RMP also violates the requirement that BLM coordinate, consult, and cooperate with individual permittees before amending an allotment management plan—See 43 U.S.C. §1752(d); 43 C.F.R. §4110.3-2.*

Response: The Draft RMP/EIS does not change any seasons of use. It does present criteria by which changes to seasons of use would be considered. Changes in seasons of use are implementation actions. It is mandatory that the BLM involve the permittee in any changes that are made to the season of use. These changes are made only after proper NEPA has been completed. The intent of the change and NEPA documentation is also listed on the BLM's NEPA Electronic Bulletin Board, which the public has access to.

Comment: *25. Sanpete County would also support the use of f1exibility for livestock grazing time and timing. The DRMP/EIS should make express provision for relaxing and modifying on and off dates and season of use parameters in certain grazing allotments as needed on a year-to-year basis, as a prescriptive fire control measure to control cheat grass and other invasive plants. Expressly prescribing such flexibility will aid in the control of noxious weeds or other undesirable plant species and in the control of fuels that were responsible for the Salt Creek fire in Sanpete County and other fires throughout the state. Sanpete County would support early grazing of cheat grass and the re-establishment of natural and/or non natives foliage/vegetation that is better for the land and for grazing (which ultimately returns suspended allotments to active allotments, protects the watershed, and provides for fire suppression). Simply stated, grazing should be a tool for fuels management outside of the permitted season of use.*

Response: The BLM's grazing regulations (43 CFR 4100) require each grazing permit to have mandatory terms and conditions, including a specified season of use, kind of livestock, and other terms and conditions as necessary. The Draft RMP/EIS has been modified to include an alternative that provides for using livestock grazing for site-specific fuels management outside the season of use.

Comment: *26. Sanpete County also notes that Alternatives C & D for Transportation would significantly limit access for grazers to take care of their cattle or sheep within their allotments and would oppose the RMP adopting these alternatives for implementation.*

Response: Access to administer BLM-permitted actions could be allowed on a case-by-case basis.

Comment: *Sanpete County recommends the BLM establish the first priority to sell, trade, or exchange identified lands to enhance public resource uses (i.e., consolidation of wildlife habitat, providing needed or improved public access, providing local public managed recreation areas and other such public benefits.*

Response: The Draft RMP-EIS Appendix 5, land tenure adjustment criteria 2, and Table 2-18 lands and realty desired outcomes address this concern.

Comment: *Sanpete County believes direction should be given in. the RMP that protects the rights of the surface land owner if and when the mineral rights are leased or claimed.*

Response: As stated in Table 2-19 of the Draft RMP/EIS: BLM would lease split-estate lands according to BLM RMP stipulations for adjacent or nearby public lands or plans of other surface management agencies as consistent with federal laws, 43 CFR 3101, and the surface owner's rights.

Comment: *Vegetation treatments Management Actions should also state actions to control and reduce prevalence of noxious and invasive weeds including those listed by the County.*

Response: The BLM is committed to controlling invasive weeds, which is important in maintaining or improving rangeland health. The presence of invasive weeds is an important indicator of rangeland health problems. BLM cooperates with local Cooperative Weed Management Areas (CWMA) to control weeds. The BLM has a Presidential directive, EO 13112, (February 3, 1999) that provides direction that the Federal Government will actively pursue weed control. The BLM also has a national weed management plan, "Meeting the Invasive Species Challenge," and an action plan for the BLM, "Partners Against Weeds," which helps direct weed control efforts. The Draft RMP/EIS Chapter 2 includes language for management of noxious weeds and invasive species (page 2-16).

Comment: *A proper baseline should be established that is based on average case scenarios as opposed to worse case scenarios. It is also important to install air quality monitoring stations that apply the best available control technology in order to accurately reflect the true air quality conditions in Sanpete County. Absence of such a baseline and technology undermines the quality of any baseline scenarios. According to air quality expert Howard Vickers, "a slight variation in how data is presented can alter greatly and sometimes unfairly, the analysis of air quality," He states, "Small differences in data or modeling technique can produce substantial problems with the results." It is important that Sanpete County as a stake holder be involved in any air quality analysis that is done so that the County can be assured that proper modeling and data techniques are used.*

Response: The "Air Quality Impact Analysis" section of the Proposed RMP/Final EIS includes baseline emission calculations. BLM stands by the assumptions on page 4-7 of the Draft RMP/EIS: "The most conservative case assumptions for air quality were used for the qualitative analysis. When a range of activity factors was assumed, the upper limit of the range was used to complete calculations for future time frames."

Comment: *Any grazing AUMs reduced in the RFO planning area due to rangeland health concerns should be restored to livestock when rangeland conditions improve and not be converted to wildlife use.*

Response: Increases or decreases in AUMs are allocated to livestock or wildlife depending on the allotment objectives contained in the RMP and Rangeland Program Summary.

Piute County

Comment: *We ask the BLM to review the County General Plan, as amended by this planning process, before a final RMP is adopted.*

Response: The BLM RFO is aware that the counties updated their general management plans in 2007. The revised general management plan was provided to BLM late in the planning process and may need to be reviewed further in development of the Proposed RMP/Final EIS. The BLM is aware that there are specific county and state plan decisions relevant to aspects of public land management that are discrete from, and independent of, federal law. However, the BLM is bound by federal law. The FLPMA requires that the development of an RMP for public lands be coordinated and consistent with county plans, to the maximum extent possible by law, and inconsistencies between federal and non-Federal Government plans be resolved to the extent practical (FLPMA, Title II Sec. 202 (c)(9)). As a consequence, where state and local plans conflict with federal law, there will be an inconsistency that cannot be resolved or reconciled. Thus, while county and federal planning processes, under FLPMA, are required to be as integrated and consistent as practical, the federal agency planning process is not bound by or subject to county plans, planning processes, or planning stipulations. The BLM will identify these conflicts in the Proposed RMP/Final EIS, so that the state and local governments have a complete understanding of the impacts of the Proposed RMP on state and local management options. A consistency review of the Proposed RMP with the state and county master plans is included in Section 5.4 of this document.

Comment: *Further, the County would like BLM to explain why VRM I or even VRM II is necessary. The lands proposed under the preferred alternative seem to be mostly WSAs which were established under VRM II but are now managed under VRM I.*

Response: Instruction Memorandum **(**IM)-2000-96 states "it is the Bureau position… that all WSAs should be classified as Class I, and managed according to VRM Class I management objectives until such time as the Congress decides to designate the area as wilderness or release it for other uses." The IM further explains "…the VRM management objectives are being used to support WSA management objectives. For WSAs, this is not only about visual values as many WSAs do not necessarily contain exceptionally high scenic values. The primary objective of WSA management is to retain the WSA's natural character essentially unaltered by humans during the time it is being managed as a WSA." Because the VRM I objective is to "preserve the existing character of the landscape" (BLM-H-8410), such a designation would complement WSA management as explained in the Interim Management Policy (IMP).

Comment: *The County does not believe BLM has the authority to create a special management criteria based solely on wilderness characteristics. We believe that the authority governing the inventory and management of lands with wilderness characteristics was passed to BLM through section 603 of the Federal Land Policy and Management Act, and that section 603 has now expired. And, while BLM may have authority to inventory their lands for various purposes, they still require Congressional authorization to manage for wilderness.*

Response: BLM's authority for managing lands to protect or enhance wilderness characteristics comes directly from FLPMA Section 202 (43 U.S.C. §1712). This section of BLM's organic statute gives the Secretary of the Interior authority to manage public lands for multiple use and sustained yield. Nothing in this section constrains the Secretary's authority to manage lands as necessary to "achieve integrated consideration of physical, biological, economic, and other sciences." FLPMA, Section 202(c)(2) (43 U.S.C. §1712(c)(2)). Further, FLPMA makes it clear that the term "multiple use" means that not every use is appropriate for every acre of public land and that the Secretary can "make the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use…" FLPMA, Section 103(c) (43 U.S.C. §1702(c)). FLPMA

intended for the Secretary of the Interior to use land use planning as a mechanism for allocating resource use, including wilderness character management, among the various resources in a way that provides uses for current and future generations. BLM has long acknowledged that FLPMA Section 603 (43 U.S.C. §1782) requiring a one-time wilderness review has expired. All current inventory of public lands is authorized by FLPMA Section 201 (43 U.S.C. §1711). In September 2006, the Utah District Court affirmed that the BLM retained authority to protect lands it determined to have wilderness characteristics in a manner substantially similar to the manner in which such lands are protected when protected as WSAs. Finally, the Utah v. Norton Settlement Agreement does not affect BLM's authority to manage public lands. This agreement merely remedied confusion by distinguishing between WSAs established under FLPMA § 603 and required to be managed under § 603's non-impairment standard, and other lands that fall within the discretionary FLMPA § 202 land management process. See also IM 2003-275.

Comment: *We would like the BLM to explain how these lands went from having no wilderness characteristics to the current status as "likely to have" wilderness characteristics, We also deeply object to any management practice which is initiated based on a standard of "likely to have" a certain need or characteristic.*

Response: When developing new land use plans, the BLM must, as with any new information, determine whether the BLM wilderness inventories or public wilderness proposals contain significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or impacts that have not previously been analyzed. To help determine whether the new information or circumstances are significant, the BLM looks at the definition of "significantly" at 43 CFR 1508.27, which requires consideration of both context and intensity. The new inventory information was reviewed and found to be significant. FLPMA specifically identifies "scenic values," "outdoor recreation," and other resource values as resources for inventory and management. See also 43 CFR 1711. A range of alternatives was considered in the Draft RMP/EIS to manage areas with wilderness characteristics. This range of alternatives is consistent with FLPMA.

Comment: *Given our concerns over this potential management strategy, the County has submitted, with these comments, its own inventory of the lands identified in Alternative D as having wilderness characteristics.*

Response: The presence or absence of man-made intrusions does not mean that an area does not possess wilderness characteristics. It is the cumulative significance of these features that determines whether an area possesses wilderness characteristics. As part of its wilderness characteristics inventory maintenance, BLM used a combination of field checks, Interdisciplinary Team review of data such as range files, county and BLM geographic information system (GIS) data, and review of high-resolution 2006 aerial photographs. Having reviewed the information submitted and determined that the information is not new and significant, BLM stands by its determination.

Comment: *We have enclosed the data from this inventory in Appendix A. The information in Appendix A was gathered in four ways. First, collaborative meetings with a broad base of stakeholders who use and know the subject lands; second, meetings with people who own grazing permits or mineral rights who have extensive historical familiarity with the lands; third, scrutiny of all data layers as provided by the State's Automated Geographic Reference Center (AGRC), the County, and others; and fourth, field research with GPS units and digital cameras, in an effort to ground-truth the above data.*

Response: The presence or absence of man-made intrusions does not mean that an area does not possess wilderness characteristics. It is the cumulative significance of these features that determines whether an area possesses wilderness characteristics. As part of its wilderness characteristics inventory maintenance, BLM used a combination of field checks, Interdisciplinary Team review of data such as range files, county and BLM GIS data, and review of high-resolution 2006 aerial photographs. Having reviewed the

information submitted and determined that the information is not new and significant, BLM stands by its determination.

Comment: *The conclusion that we have made, based on this information, is that while there are some small areas that remain relatively undisturbed by man, the BLM has failed to demonstrate the necessary standard on size, naturalness, and outstanding nature. Further, in most areas, the BLM fails to demonstrate the necessary standard on isolation and opportunity for solitude.*

Response: The presence or absence of man-made intrusions does not mean that an area does not possess wilderness characteristics. It is the cumulative significance of these features that determines whether an area possesses wilderness characteristics. As part of its wilderness characteristics inventory maintenance, BLM used a combination of field checks, Interdisciplinary Team review of data such as range files, county and BLM GIS data, and review of high-resolution 2006 aerial photographs. Having reviewed the information submitted and determined that the information is not new and significant, BLM stands by its determination.

Comment: *Piute County has several other concerns about the proposed wilderness character lands. First, we are in a process of amending our County General Plan based on the aforementioned collaborative process, and have included a statement of opposition to the management of the described for their wilderness character.*

Response: BLM is aware that there are specific state laws relevant to aspects of public land management that are discrete from, and independent of, federal law. However, the BLM is bound by federal law. As a consequence, there may be inconsistencies that cannot be reconciled. FLPMA requires that BLM's land use plans be consistent with state and local plans "to the extent practical" where state and local plans conflict with federal law there will be an inconsistency that cannot be resolved. The BLM will identify these conflicts in the Proposed RMP/Final EIS so that the state and local governments have a complete understanding of the impacts of the Proposed RMP on state and local management options.

Comment: *Second, as we have stated above, we are troubled by any management condition implemented based on statements such as "likely to have wilderness characteristics."*

Response: Sections 103, 201, and 202 of FLPMA direct the BLM to take into account the national interest, as well as the local interest. In accordance with FLPMA and BLM rules, regulations, and policies, the BLM must provide for the balanced management of all resources and resource uses on public lands.

The BLM gave consideration to the concerns of local governments throughout the planning process. In particular, Piute County is a cooperating agency and has been an active cooperator, including during the development of alternatives where non-WSA areas with wilderness characteristics were considered. The Proposed RMP management actions would not manage for any non-WSA lands with wilderness characteristics in Piute County.

Comment: *We assert that grazing contributes to the overall health of watersheds, wildlife habitat, and the general rangeland. It is the County's further contention that BLM should adopt a vigorous program of treatment where once available grazing forage has moved to Juniper and Pinion or other woody plants, or where the health of the range has suffered for any other reason. This should include mechanical treatments such as chaining, logging, burning, seeding, or other such methods. We further ask BLM to consider using creative and innovative management in their use of grazing. This may include the use of spring grazing where appropriate, to help with problems of cheat grass and other invasives, and to improve rangeland conditions generally.*

Response: The Proposed RMP supports the statement of reducing juniper and pinyon encroachment. Table 2-15 of the Draft RMP/EIS allows for using livestock grazing to enhance ecosystem health or mitigate resource problems (e.g., noxious/invasive weed control, hazardous fuel reduction) where supported by site-specific environmental analysis.

Comment: *We also ask BLM to refer to our County General Plan. We believe that insufficient weight is given in socio-economic studies to the value of the cattle and sheep industry, and associated grazing activities, to the overall economic well-being of rural counties, and Piute County in particular.*

Response: Selections from the county plans were considered for socioeconomics in Sections 3.6.1 and 4.6.1 of this document. Appendix 13 summarizes statements, comments, and direction provided by the counties on public land and resource management contained in the general plans of the five counties encompassed by BLM's RFO. In addition, BLM has reviewed both USU's Review of the Socioeconomic Analysis in the Draft EIS prepared by the USDI—BLM RFO, sometimes referred to as the Six-County AOG study, and portions of its Trend Information for the Richfield RMP: Livestock Industry Issues. The AOG study expressed concerns with the Draft RMP/EIS analyses of livestock grazing in the counties. Portions of the Trend Information for the Richfield RMP: Livestock Industry Issues expressed additional livestock issues such as a desire for flexible livestock grazing management provisions.

The AOG study was a critique of the original Draft EIS; the current, public Draft EIS has been modified considerably and has taken into account, directly or indirectly, many of the concerns expressed in the original AOG critique. The RMP provides a balanced approach and equal consideration was given to socioeconomics.

Based on CEQ Sec. 1502.2 BLM's policies and guidelines require BLM to analyze the impacts of significant differences from the current situation (i.e., the Alternative N: No Action). Given that the percent change in AUMs across alternatives is only 0.7 percent, there is no need to do the depth of livestock grazing analysis suggested by the livestock studies mentioned earlier.

Furthermore, the BLM objectively determined a reasonable range of alternatives that best addressed the issues, concerns, and alternatives identified by the public, including BLM management of livestock grazing. Alternative A would have an additional 1.079 AUMs and 36,950 acres available for livestock grazing. There would be no change in livestock grazing management from current management under any of the other alternatives. The Proposed RMP shows no significant difference from the current situation; therefore, there is no significant impact from BLM decisions reached in the plan.

Comment: *Our main concern is that the OHV community, so vital to the economies of our small rural communities, seems to be under constant attack, and pressure to diminish their presence on our public lands is continually increasing. For example, under the preferred alternative, you close very large areas to open use which are currently heavily used and popular with the OHV Community, and you leave only 1% of the entire RFO area available to open OHV use.*

Response: BLM considered a range of alternatives to address OHV use. Under *The National OHV Strategy*, the BLM is moving from mostly open to designated routes for the protection of natural and cultural resources. Under the Proposed RMP, the majority of routes currently in use would continue to be available for use, but not for cross-country travel. The Proposed RMP would designate 2 SRMAs (Factory Butte and Big Rocks) and the Glenwood and Aurora play areas to allow for a continued OHV cross country experience.

Comment: *We also note that the County has a travel map showing all our roads and trails, and the BLM's travel plan should be consistent with the County's information.*

Response: As described in the Draft RMP/EIS, the BLM used a variety of methods to inventory existing routes/ways within the RFO for consideration in the planning process, including global positioning system data (when available), data provided by the counties, map and orthophoto data, and staff/cooperator knowledge. Based on this inventory, the BLM identified 4,380 miles of routes/ways (Map 3-10 of the Draft RMP/EIS) within the RFO. It should be noted that route designations are implementation decisions and that the resulting transportation network could change over time. Management direction for OHVs is provided in 43 CFR 8340, BLM Manual 8340, and the BLM National OHV Management Strategy.

Comment: *Piute County is not comfortable with the BLM's RFD, or the manner in which the BLM determines the potential future economic viability of certain minerals. It does not match county planning or the county's assessment of potential value.*

Response: The RFD predicts a reasonable development scenario for oil and gas activity. The commenter does not substantiate deficiencies in the analysis or RFD. The mineral potential report addressed the likelihood of mineral development. Chapter 3 of the Draft RMP/EIS updated the mineral potential report. The commenter does not substantiate deficiencies in the analysis. The coal resource reports identified areas with mineable resources. The unsuitability criteria were applied to determine areas suitable for consideration of coal leasing. The commenter does not substantiate deficiencies in the analysis.

Comment: *Designation of any segments of as wild and scenic would unnecessarily restrict the ability of the water users to carry on the daily management of their water.*

Response: Barring congressional action, there is no effect on water rights or in-stream flows related to suitability findings made in a land use plan decision. Even if Congress were to designate rivers into the National Wild and Scenic Rivers System, any such designation would have no effect on existing water rights. Section 13(b) of the Wild and Scenic River Act states that jurisdiction over waters is determined by established principles of law. In Utah, the State has jurisdiction over water. Although the Wild and Scenic Rivers Act implies a Federal reserved water right for designated rivers, it does not require or specify any amount, and as noted above, confirms that Utah has jurisdiction over water rights. The BLM would be required to adjudicate the water right, in the same manner as any other entity, by application through State processes. Thus, for congressionally designated rivers, the BLM may assert a Federal reserved water right for appurtenant and unappropriated water with a priority date as of the date of designation (junior to all existing rights), but only in the minimum amount necessary to fulfill the primary purpose of the reservation.

Comment: *We are also concerned about the management before actual Congressional action creates formal wild and scenic designation.*

Response: Management protection afforded rivers is found in Section 5(d) of the Wild and Scenic River Act and depends on whether the identified river segment is found eligible or suitable. River segments found eligible are managed at the discretion of the administering agency to protect free-flow, outstandingly remarkable values, and tentative classification until a suitability determination is made; rivers found suitable are managed at the discretion of the administering agency for the same values and recommended classification pending congressional action or for the duration of the RMP, but not as a designated WSR, which is specified by Congress. Management prescriptions under both suitability and eligibility phases are subject to valid existing rights.

Comment: *We reiterate that we do not believe BLM has met the suitability standards based on the requirements of state law.*

Response: Federal law, with which the BLM must comply, takes precedence over others: Section 16(b) of the Wild and Scenic River Act defines a river as “a flowing body of water or estuary, or a section,

portions, or tributary thereof, including rivers, streams, creeks, runs, rills, kills, and small lakes". For purposes of evaluation, the volume of water flow need only be sufficient to sustain or complement the identified resource values—rivers with intermittent or non-perennial flows already exist within the national river system.

Wayne County

Comment: *We ask the BLM to review the County General Plan, as amended by this planning process, before a final RMP is adopted.*

Response: The BLM RFO is aware that the counties have updated their general management plans in 2007. The revised general management plan was provided to BLM late in the planning process and may need to be reviewed further in development of the Proposed RMP/Final EIS. The BLM is aware that there are specific county and state plan decisions relevant to aspects of public land management that are discrete from, and independent of, federal law. However, the BLM is bound by federal law. The FLPMA requires that the development of an RMP for public lands be coordinated and consistent with county plans, to the maximum extent possible by law, and inconsistencies between federal and non-Federal Government plans be resolved to the extent practical (FLPMA, Title II Sec. 202 (c)(9)). As a consequence, where state and local plans conflict with federal law there will be an inconsistency that cannot be resolved or reconciled. Thus, while county and federal planning processes, under FLPMA, are required to be as integrated and consistent as practical, the federal agency planning process is not bound by or subject to county plans, planning processes, or planning stipulations. The BLM will identify these conflicts in the Proposed RMP/Final EIS, so that the state and local governments have a complete understanding of the impacts of the Proposed RMP on state and local management options. A consistency review of the Proposed RMP with the state and county master plans is included in Section 5.4 of this document.

Comment: *Therefore, we believe, as policy, there should be less focus on creating ever-expanding areas where management is restricted or prohibited, and more active management of those areas to address issues of fire and vegetation.*

Response: The RFO considered fire and vegetation issues in selecting new areas for managing non-WSA lands with wilderness characteristics.

Comment: *Also, the statement in your explanatory materials that "the citizens of Wayne County support VRM I or II management" is simply not true. We constantly hear from our citizens regarding this matter, and the overwhelming majority do not support VRM l.*

Response: BLM acknowledges that there are varying opinions on VRM Classes among the citizens of Wayne County.

Comment: *Further, the County would like BLM to explain why VRM I or even VRM II is necessary. The lands proposed under the preferred alternative seem to be mostly WSAs which were established under VRM II but are now managed under VRM I.*

Response: IM-2000-96 states "it is the Bureau position… that all WSAs should be classified as Class I, and managed according to VRM Class I management objectives until such time as the Congress decides to designate the area as wilderness or release it for other uses." The IM further explains "…the VRM management objectives are being used to support WSA management objectives. For WSAs, this is not only about visual values as many WSAs do not necessarily contain exceptionally high scenic values. The primary objective of WSA management is to retain the WSA's natural character essentially unaltered by humans during the time it is being managed as a WSA." Because the VRM I objective is to "preserve the

existing character of the landscape" (BLM-H-8410), such a designation would complement WSA management as explained in the IMP.

Comment: *The County does not believe BLM has the authority to create a special management criteria based solely on wilderness characteristics.*

Response: BLM's authority for managing lands to protect or enhance wilderness characteristics comes directly from FLPMA Section 202 (43 U.S.C. §1712). This section of BLM's organic statute gives the Secretary of the Interior authority to manage public lands for multiple use and sustained yield. Nothing in this section constrains the Secretary's authority to manage lands as necessary to "achieve integrated consideration of physical, biological, economic, and other sciences." FLPMA, Section 202(c)(2) (43 U.S.C. §1712(c)(2)). Further, FLPMA makes it clear that the term "multiple use" means that not every use is appropriate for every acre of public land and that the Secretary can "make the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use…" FLPMA, Section 103(c) (43 U.S.C. §1702(c)). FLPMA intended for the Secretary of the Interior to use land use planning as a mechanism for allocating resource use, including wilderness character management, among the various resources in a way that provides uses for current and future generations. BLM has long acknowledged that FLPMA Section 603 (43 U.S.C. §1782) requiring a one-time wilderness review has expired. All current inventory of public lands is authorized by FLPMA Section 201 (43 U.S.C. §1711). In September 2006, the Utah District Court affirmed that the BLM retained authority to protect lands it determined to have wilderness characteristics in a manner substantially similar to the manner in which such lands are protected when protected as WSAs. Finally, the Utah v. Norton Settlement Agreement does not affect BLM's authority to manage public lands. This agreement merely remedied confusion by distinguishing between WSAs established under FLPMA § 603 and required to be managed under § 603's non-impairment standard, and other lands that fall within the discretionary FLMPA § 202 land management process. See also IM 2003-275.

Comment: *We would like the BLM to explain how these lands went from having no wilderness characteristics to the current status as "likely to have" wilderness characteristics.*

Response: When developing new land use plans, the BLM must, as with any new information, determine whether the BLM wilderness inventories or public wilderness proposals contain significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or impacts that have not previously been analyzed. To help determine whether the new information or circumstances are significant, the BLM looks at the definition of "significantly" at 43 CFR 1508.27, which requires consideration of both context and intensity. The new inventory information was reviewed and found to be significant. FLPMA specifically identifies "scenic values," "outdoor recreation," and other resource values as resources for inventory and management. See also 43 CFR 1711. A range of alternatives was considered in the Draft RMP/EIS to manage areas with wilderness characteristics. This range of alternatives is consistent with FLPMA.

Comment: *The County has submitted, with these comments, its own inventory of the lands identified in Alternative D as having wilderness characteristics.*

Response: The BLM considered the county's inventory in developing the Proposed RMP and, based upon all available information, BLM carried forward 78,600 acres (12 percent) of the 682,600 acres of non-WSA lands with wilderness characteristics identified in the Draft RMP Alternative D. The presence or absence of man-made intrusions does not mean that an area does not possess wilderness characteristics. It is the cumulative significance of these features that determines whether an area possesses wilderness characteristics. As part of its wilderness characteristics inventory maintenance, BLM used a combination of field checks, Interdisciplinary Team review of data such as range files, county and BLM GIS data, and

review of high-resolution 2006 aerial photographs. Having reviewed the information submitted and determined that the information is not new and significant BLM stands by its determination.

Comment: *The BLM has failed to demonstrate the necessary standard on size, naturalness, and outstanding nature. Further, in most areas, the BLM fails to demonstrate the necessary standard on isolation and opportunity for solitude.*

Response: As part of its wilderness characteristics inventory maintenance, BLM used a combination of field checks, Interdisciplinary Team review of data such as range files, county and BLM GIS data, and review of high-resolution 2006 aerial photographs. Having reviewed the information submitted and determined that the information is not new and significant, BLM stands by its determination.

Comment: *A statement of opposition to the management of the described lands for their wilderness character. We have enclosed that statement in Appendix B. Second, as we have stated above, we are troubled by any management condition implemented based on statements such as "likely to have wilderness characteristics." We believe that the County's inventory of those lands represents an accurate picture of the condition and use of those lands, and that our ground-proofing information is much more reliable.*

Response: The BLM considered the County's inventory in developing the Proposed RMP, and based upon all available information BLM carried forward 78,600 acres (12 percent) of the 682,600 acres of non-WSA lands with wilderness characteristics identified in the Draft RMP Alternative D. The presence or absence of man-made intrusions does not mean that an area does not possess wilderness characteristics. It is the cumulative significance of these features that determines whether an area possesses wilderness characteristics. As part of its wilderness characteristics inventory maintenance, BLM used a combination of field checks, Interdisciplinary Team review of data such as range files, county and BLM GIS data, and review of high-resolution 2006 aerial photographs. Having reviewed the information submitted and determined that the information is not new and significant BLM stands by its determination.

Comment: *Third, nearly 40% of the lands BLM has indicated statewide as "likely to have" wilderness characteristics are within Wayne County. Given that the County already lives with the limitations of having only 3% of their lands in private ownership, having that much land under a new level of special management is an unacceptable burden.*

Response: Sections 103, 201, and 202 of FLPMA direct the BLM to take into account the national interest, as well as the local interest. In accordance with FLPMA and BLM rules, regulations, and policies, the BLM must provide for the balanced management of all resources and resource uses on public lands.

The BLM gave strong consideration to the concerns of local governments throughout the planning process. In particular, Wayne County is a cooperating agency and was included during the development of alternatives when non-WSA areas with wilderness characteristics were considered.

Under the Proposed RMP, only 12 percent of the identified non-WSA lands with wilderness characteristics would be managed to protect wilderness values. Approximately 88 percent of these areas would continue to be managed for multiple-use.

Comment: *BLM should adopt a vigorous program of treatment where once available grazing forage has moved to Juniper and Pinion or other woody plants, or where the health of the range has suffered for any other reason. This should include mechanical treatments such as chaining, logging, burning, seeding, or other such methods. We further ask BLM to consider using creative and innovative management in their use of grazing. This may include the use of spring grazing where appropriate, to help with problems of cheat grass and other invasives, and to improve rangeland conditions generally.*

Response: The proposed alternative supports the statement of reducing juniper and pinyon encroachment. Table 2-15 of the Draft RMP/EIS allows for using livestock grazing to enhance ecosystem health or mitigate resource problems (e.g., noxious/invasive weed control, hazardous fuel reduction) where supported by site-specific environmental analysis.

Comment: *We believe that insufficient weight is given in socio-economic studies to the value of the cattle and sheep industry, and associated grazing activities, to the overall economic well-being of rural counties, and Wayne County in particular.*

Response: Selections from the county plans were considered for socioeconomics in Sections 3.6.1 and 4.6.1 of this document. Appendix 13 summarizes statements, comments, and direction provided by the counties on public land and resource management contained in the general plans of the five counties encompassed by BLM's RFO. In addition, BLM has reviewed both USU's Review of the Socioeconomic Analysis in the Draft EIS prepared by the USDI—BLM RFO, sometimes referred to as the Six-County AOG study, and portions of its Trend Information for the Richfield RMP: Livestock Industry Issues. The AOG study expressed concerns with the Draft RMP/EIS analyses of livestock grazing in the counties. Portions of the Trend Information for the Richfield RMP: Livestock Industry Issues expressed additional livestock issues such as a desire for flexible livestock grazing management provisions.

The AOG study was a critique of the original Draft EIS; the current, public Draft EIS has been modified considerably and has taken into account, directly or indirectly, many of the concerns expressed in the original AOG critique. The RMP provides a balanced approach and equal consideration was given to socioeconomics.

Based on CEQ Sec. 1502.2 BLM's policies and guidelines require BLM to analyze the impacts of significant differences from the current situation (i.e., the Alternative N: No Action). Given that the percent change in AUMs across alternatives is only 0.7 percent, there is no need to do the depth of livestock grazing analysis suggested by the livestock studies mentioned earlier.

Furthermore, the BLM objectively determined a reasonable range of alternatives that best addressed the issues, concerns, and alternatives identified by the public, including BLM management of livestock grazing. Alternative A would have an additional 1.079 AUMs and 36,950 acres available for livestock grazing. There would be no change in livestock grazing management from current management under any of the other alternatives. The Proposed RMP shows no significant difference from the current situation; therefore, there is no significant impact from BLM decisions reached in the plan.

Comment: *Our main concern is that the OHV community, so vital to the economies of our small rural communities, seems to be under constant attack, and pressure to diminish their presence on our public lands is continually increasing. For example, under the preferred alternative, you close very large areas to open use which are currently heavily used and popular with the OHV Community, and you leave only 1% of the entire RFO area available to open OHV use. How does this compare to the total area made available for primitive and semi-primitive activities? Areas of public land where OHV use is allowed remain fully accessible by the hiking/biking enthusiasts, as well as other users. However, the ever-increasing "primitive or semi-primitive" areas are basically unavailable to OHV use. How does this compare to the total area made available for primitive and semi-primitive activities?*

Response: BLM considered a range of alternatives to address OHV use. Under the Proposed RMP, the majority of routes currently in use would continue to be available for use, but not for cross-country travel.

Comment: *We also note that the County has a travel map showing all our roads and trails, and the BLM's travel plan should be consistent with the County's information.*

Response: As described in the Draft RMP/EIS, the BLM used a variety of methods to inventory existing routes/ways within the RFO for consideration in the planning process, including global positioning system data (when available), data provided by the counties, map and orthophoto data, and staff/cooperator knowledge. Based on this inventory, the BLM identified 4,380 miles of routes/ways (Map 3-10 of the Draft RMP/EIS) within the RFO. It should be noted that route designations are implementation decisions and that the resulting transportation network could change over time. Management direction for OHVs is provided in 43 CFR 8340, BLM Manual 8340, and the BLM National OHV Management Strategy. Nothing in this RMP extinguishes any valid ROW, or alters in any way the legal rights the State of Utah and Garfield, Piute, Sanpete, Sevier, and Wayne counties have to assert and protect RS 2477 rights, and to challenge in federal court or other appropriate venue any use restrictions imposed by the RMP that they believe are inconsistent with their rights.

Comment: *Wayne County is not comfortable with the BLM's RFD, or the manner in which the BLM determines the potential future economic viability of certain minerals. It does not match county planning or the County's assessment of potential value.*

Response: The RFD predicts a reasonable development scenario for oil and gas activity. The commenter does not substantiate deficiencies in the analysis or RFD. The mineral potential report addressed the likelihood of mineral development. Chapter 3 of the Draft RMP/EIS updated the mineral potential report. The commenter does not substantiate deficiencies in the analysis. The coal resource reports identified areas with mineable resources. The unsuitability criteria were applied to determine areas suitable for consideration of coal leasing. The commenter does not substantiate deficiencies in the analysis.

Comment: *Designation of any segment of the Fremont and Dirty Devil system as wild and scenic would unnecessarily restrict the ability of the water users to carry on the daily management of their water.*

Response: Barring congressional action, there is no effect on water rights or in-stream flows related to suitability findings made in a land use plan decision. Even if Congress were to designate rivers into the National Wild and Scenic Rivers System, any such designation would have no effect on existing water rights. Section 13(b) of the Wild and Scenic River Act states that jurisdiction over waters is determined by established principles of law. In Utah, the State has jurisdiction over water. Although the Wild and Scenic Rivers Act implies a Federal reserved water right for designated rivers, it does not require or specify any amount, and as noted above, confirms that Utah has jurisdiction over water rights. The BLM would be required to adjudicate the water right, in the same manner as any other entity, by application through State processes. Thus, for congressionally designated rivers, the BLM may assert a Federal reserved water right for appurtenant and unappropriated water with a priority date as of the date of designation (junior to all existing rights), but only in the minimum amount necessary to fulfill the primary purpose of the reservation.

Comment: *We are also concerned about the management before actual Congressional action creates formal wild and scenic designation.*

Response: Management protection afforded rivers is found in Section 5(d) of the Wild and Scenic River Act and depends on whether the identified river segment is found eligible or suitable. River segments found eligible are managed at the discretion of the administering agency to protect free-flow, outstandingly remarkable values, and tentative classification until a suitability determination is made; rivers found suitable are managed at the discretion of the administering agency for the same values and recommended classification pending congressional action or for the duration of the RMP but not as a designated WSR, which is specified by Congress. Management prescriptions under both suitability and eligibility phases are subject to valid existing rights.

Comment: *The one-quarter mile corridor set aside for wild and scenic would most certainly impact potential mineral development, especially the uranium resources along the Dirty Devil.*

Response: The Proposed RMP does not recommend the Dirty Devil as a suitable for inclusion in the wild and scenic river system. The lands within the Dirty Devil river corridor are for the most part within the Dirty Devil WSA and subject to the IMP restrictions which provide protection for the river's outstandingly remarkable values. Also, the lands within the Dirty Devil river corridor are for the most part within the Dirty Devil WSA and subject to the IMP restrictions until Congress makes a final determination on Wilderness designation. The one-quarter mile corridor outside of the WSA is essentially a near- vertical cliff with some bench lands, which have restricted access.

Comment: *We do not believe BLM has met the suitability standards based on the requirements of state law.*

Response: Federal law, with which the BLM must comply, takes precedence over others: Section 16(b) of the Wild and Scenic River Act defines a river as "a flowing body of water or estuary, or a section, portions, or tributary thereof, including rivers, streams, creeks, runs, rills, kills, and small lakes." For purposes of evaluation, the volume of water flow need only be sufficient to sustain or complement the identified resource values; rivers with intermittent or non-perennial flows already exist within the national river system.

Comment: *The only conclusion is that the single justification for proposing new ACECs is to act as a fail-safe method to insure that some higher level of restrictive management occurs on these areas.*

Response: The Proposed RMP includes the designation of 2 ACECs, Old Woman Front and North Cainville Mesa, which do not overlap WSAs. The BLM has separate policies and guidelines, as well as criteria, for establishing ACECs and WSAs. These differing criteria make it possible that the same lands will qualify as both an ACEC and a WSA but for different reasons. The BLM is required to consider these different policies.

The values protected by WSA management prescriptions do not necessarily protect those values found relevant and important in ACEC evaluation, and vice versa. The relevant and important values of ACECs within or adjacent to WSAs were noted in the ACEC Evaluation (Appendix 1). The ACECs are evaluated and ranked based on the presence or absence of the stated relevant and important values. None of these values includes wilderness characteristics. Additionally, the management prescriptions for the ACECs is limited in scope to protect the relevant and important values, and the BLM maintains that the size of the ACEC areas is appropriate for protection of the relevant and important values identified.

Comment: *The DRMP/EIS would turn the Kimball decision on its head by purporting to create the new Alternative D management standard.*

Response: The BLM's authority for managing lands to protect or enhance wilderness characteristics is derived directly from FLPMA Section 202 (43 U.S.C. §1712).

This section of BLM's organic statute gives the Secretary of the Interior authority to manage public lands for multiple use and sustained yield. Nothing in this section constrains the Secretary's authority to manage lands as necessary to "achieve integrated consideration of physical, biological, economic, and other sciences." (FLPMA, Section 202(c)(2) [43 U.S.C. §1712(c)(2)]) Further, FLPMA makes it clear that the term "multiple use" means that not every use is appropriate for every acre of public land, and that the Secretary can "make the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use…" (FLPMA, Section 103(c) [43 U.S.C. §1702(c)]) The FLPMA intended for the Secretary of the Interior to use land use planning as a mechanism for allocating resource use, including wilderness character management, among the various resources in a way that provides uses for current and future generations.

The BLM has long acknowledged that FLPMA Section 603 (43 U.S.C. §1782) requiring a one-time wilderness review has expired. All current inventory of public lands is authorized by FLPMA Section 201 (43 U.S.C. §1711). In September 2006, the Utah District Court affirmed that the BLM retained authority to protect lands it determined to have wilderness characteristics in a manner substantially similar to the manner in which such lands are protected as WSAs.

The BLM is aware that there are specific state laws relevant to aspects of public land management that are discrete from, and independent of, federal law. However, BLM is bound by federal law. As a consequence, there may be inconsistencies that cannot be reconciled. The FLPMA requires that BLM's land use plans be consistent with state and local plans "to the extent practical" where state and local plans conflict with federal law, there will be an inconsistency that cannot be resolved. The BLM will identify these conflicts in the Proposed RMP/Final EIS so that the state and local governments have a complete understanding of the impacts of the Proposed RMP on state and local management options.

Finally, the Utah v. Norton Settlement Agreement does not affect BLM's authority to manage public lands. This agreement merely remedied confusion by distinguishing between WSAs established under FLPMA §603 and those lands required to be managed under §603's non-impairment standard, and other lands that fall within the discretionary FLMPA §202 land management process.

Comment: *Adopting Alternative D would violate the restrictions of BLM's own Instruction Memorandum No. 2003-275, which states "it is no longer BLM policy to continue to make formal determinations regarding wilderness character, designate new WSAs through the land use planning process, or manage any lands - [except Section 603 WSAs) in accordance with the non-impairment standard prescribed in the IMP [Interim Management Policy for WSAs]." (Emphasis added.)*

Response: The BLM's authority for managing lands to protect or enhance wilderness characteristics comes directly from FLPMA Section 202 (43 U.S.C. §1712). This section of BLM's organic statute gives the Secretary of the Interior authority to manage public lands for multiple use and sustained yield. Nothing in this section constrains the Secretary's authority to manage lands as necessary to "achieve integrated consideration of physical, biological, economic, and other sciences." (FLPMA, Section 202(c)(2) [43 U.S.C. §1712(c)(2)]) Further, FLPMA makes it clear that the term "multiple use" means that not every use is appropriate for every acre of public land and that the Secretary can "make the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use…" (FLPMA, Section 103(c) [43 U.S.C. §1702(c)]) The FLPMA intended for the Secretary of the Interior to use land use planning as a mechanism for allocating resource use, including wilderness character management, among the various resources in a way that provides uses for current and future generations. In addition, the BLM's *Land Use Planning Handbook* (H-1601-1) directs BLM to "identify decisions to protect or preserve wilderness characteristics (naturalness, outstanding opportunities for solitude, and outstanding opportunities for primitive and unconfined recreation) including goals and objectives to protect the resource and management actions necessary to achieve these goals and objectives. For authorized activities, include conditions of use that would avoid or minimize impacts to wilderness characteristics."

Comment: *Managing the Subject Lands Under Alternative D Would Clash With State and Local Policies and Plans for Managing Those Lands, and Would Thus Violate the Consistency Requirement of FLPMA Section 202(c)(9).*

Response: BLM is aware that there are specific state laws relevant to aspects of public land management that are discrete from, and independent of, federal law. However, BLM is bound by federal law. As a consequence, there may be inconsistencies that cannot be reconciled. FLPMA requires that BLM's land use plans be consistent with state and local plans "to the extent practical" where state and local plans conflict with federal law, there will be an inconsistency that cannot be resolved. BLM will identify these

conflicts in the Proposed RMP/Final EIS so that the state and local governments have a complete understanding of the impacts of the Proposed RMP on state and local management options.

Comment: *Managing the subject lands under Alternative D would arbitrarily and capriciously ignore the documentation and information submitted by wayne county which show the subject lands lack true wilderness character.*

Response: The presence or absence of man-made intrusions does not mean that an area does not possess wilderness characteristics. It is the cumulative significance of these features that determines whether an area possesses wilderness characteristics. As part of its wilderness characteristics inventory maintenance, BLM used a combination of field checks, Interdisciplinary Team review of data such as range files, county and BLM GIS data, and review of high-resolution 2006 aerial photographs. Having reviewed the information submitted and determined that the information is not new and significant, the BLM stands by its determination.

Comment: *A proper baseline should be established.*

Response: The "Air Quality Impact Analysis" section of the Proposed RMP/Final EIS includes baseline emission calculations. BLM stands by the assumptions on page 4-7 of the Draft RMP/EIS: "The most conservative case assumptions for air quality were used for the qualitative analysis. When a range of activity factors was assumed, the upper limit of the range was used to complete calculations for future time frames."

Comment: *It is important to the County, as stake holder, that we be involved in any air quality analysis that is done so that we can be assure that proper modeling and data techniques are used.*

Response: The "Air Quality Impact Analysis" section of the Proposed RMP/Final EIS includes baseline emission calculations. BLM stands by the assumptions on page 4-7 of the Draft RMP/EIS: "The most conservative case assumptions for air quality were used for the qualitative analysis. When a range of activity factors was assumed, the upper limit of the range was used to complete calculations for future time frames."

Comment: *First and foremost, Wayne County believes that BLM's process by which it attempted to study Wild & Scenic River suitability is procedurally flawed by its failure to follow NEPA procedures and Wild and Scenic guidelines for determining suitability.*

Response: BLM, USFS, and NPS developed a statewide interagency agreement to ensure coordination and consistency for WSR planning efforts in the state. As a result, the three agencies jointly prepared and then released in January 1997, the document, *Wild and Scenic River Review in the State of Utah, Process and Criteria for Interagency Use*. This document provides evaluation criteria and procedures and emphasizes interagency cooperation as well as other agency and government coordination and public involvement. It supplements general national wild and scenic guidance for each of the three agencies. This guideline is consistent with the Wild and Scenic River Act and the BLM manual.

Comment: *BLM should conclude that no proposed segment in Wayne County is suitable for designation, for the additional reason that prohibitions on impoundment that accompany designation would violate the pre-existing rights of impoundment granted under the 1922 Colorado River Compact. Furthermore, it is obvious BLM failed to consider for NEPA purposes, the impact of a suitability designation on the pre-existing right of impoundment provided under the 1922 Colorado River Compact.*

Response: The Colorado River Compact granted the signatory states a general authority to impound water as necessary within their borders for the purpose of making beneficial use of waters allocated to each state under the compact. The compact did not establish specific rights to impound waters in specific locations within each state. The authority to create specific rights to build and operate storage facilities

was delegated to state governments that have the authority to allocate water within their boundaries. Absent a specific decree or state permit authorizing a storage structure, there is no specific right to store water at any location on the streams within the planning area. In addition, a legal prohibition on building storage structures does not occur as part of a BLM suitability determination on a stream reach. The legal prohibition occurs only when Congress acts to designate a specific stream reach as part of the national WSR system. When making WSR designations, Congress is obligated to consider the impact of that designation on Utah's rights under the Colorado River Compact, and to consider the impact on existing storage decrees and permits.

Comment: *BLM failed to consider for NEPA purposes, the impact of a suitability designation on the pre-existing right of impoundment provided under the 1922 Colorado River Compact.*

Response: The Colorado River Compact granted the signatory states a general authority to impound water as necessary within their borders for the purpose of making beneficial use of waters allocated to each state under the compact. The compact did not establish specific rights to impound waters in specific locations within each state. The authority to create specific rights to build and operate storage facilities was delegated to state governments that have the authority to allocate water within their boundaries. Absent a specific decree or state permit authorizing a storage structure, there is no specific right to store water at any location on the streams within the planning area. In addition, a legal prohibition on building storage structures does not occur as part of a BLM suitability determination on a stream reach. The legal prohibition occurs only when Congress acts to designate a specific stream reach as part of the national WSR system. When making WSR designations, Congress is obligated to consider the impact of that designation on Utah's rights under the Colorado River Compact, and to consider the impact on existing storage decrees and permits.

Comment: *To manage eligible and suitable segments as if they were already designated for inclusion by Congress also incorrectly implies that a federal reserved water right exists, thereby impacting the future management and utilization of valid existing water rights above.*

Response: Under WSR designation, the managing agency is obligated to honor valid, existing rights, including water rights. Within a designated segment, water users are entitled to implement reasonable, historic operation and maintenance practices. Water users are also allowed to change and upgrade their facilities to the extent that the change does not diminish the outstandingly remarkable values or free-flowing nature of the stream segment. The flow protection associated with a designated river is implemented in the form of a junior water right claimed by the managing agency. By law, junior water rights cannot take water from senior water rights. Even under designation, senior water rights holders would be able to divert their full water rights decrees.

Comment: *Wayne County also objects to the following language common to alternatives A–D on page 2-8: "Manage suitable river segments in a manner that would protect their outstandingly remarkable values, tentative classification, and free flowing nature." That language should be substituted with the following language: "River corridors of suitable rivers will be managed according to other resource decisions with respect to that corridor, unless and until such time as Congress may designate such corridors for inclusion in the National Wild and Scenic River System."*

Response: Management protection afforded rivers is found in Section 5(d) of the Wild and Scenic River Act and depends on whether the identified river segment is found eligible or suitable. River segments found eligible are managed at the discretion of the administering agency to protect free-flow, outstandingly remarkable values, and tentative classification until a suitability determination is made; rivers found suitable are managed at the discretion of the administering agency for the same values and recommended classification pending congressional action or for the duration of the RMP but not as a

designated WSR, which is specified by Congress. Management prescriptions under both suitability and eligibility phases are subject to valid existing rights.

Comment: *page 2-8. "Manage suitable river segments in a manner that would protect their outstandingly remarkable values, tentative classification, and free flowing nature." That language should be substituted with the following language: "River corridors of suitable rivers will be managed according to other resource decisions with respect to that corridor, unless and until such time as Congress may designate such corridors for inclusion in the National Wild and Scenic River System."*

Response: Management protection afforded rivers is found in Section 5(d) of the Wild and Scenic River Act and depends on whether the identified river segment is found eligible or suitable. River segments found eligible are managed at the discretion of the administering agency to protect free-flow, outstandingly remarkable values, and tentative classification until a suitability determination is made; rivers found suitable are managed at the discretion of the administering agency for the same values and recommended classification pending congressional action or for the duration of the RMP but not as a designated WSR, which is specified by Congress. Management prescriptions under both suitability and eligibility phases are subject to valid existing rights.

Comment: *Utah Code Section 63-38d-401 essentially states that if rangeland conditions improve that suspended AUMS would be returned to livestock before additional AUMS would be provided for wildlife. We are concerned that this has not and is not being adhered to in the RMP.*

Response: Per the 43 CFR 4100 regulation, suspended AUMs are restored to the operator to the amount of the suspension if conditions allow. Beyond this, AUMs are allocated to livestock or wildlife depending on the allotment objectives contained in the RMP and Rangeland Program Summary.

Comment: *The DRMP/EIS grazing that would reduce grazing AUM levels is faulty because the DRMP/EIS fails to articulate a legal or factual basis to reduce domestic livestock.*

Response: The Draft RMP/EIS does not include any alternatives that consider decreases in livestock grazing; therefore, this comment does not apply to this document.

Comment: *Wayne County objects to the extent any grazing alternative in the DRMP/EIS attempts to authorize the retirement of grazing permits and their reallocation to wildlife. This violates the Taylor Grazing Act, 43 U.S.C. § 315, FLPMA, 43 U.S.C. § 1742, and the terms of the Executive Orders No. 6910, 54 J.D. 539 (1934), and No. 6964 (Feb. 5, 1935), which withdrew public lands as chiefly valuable for grazing.*

Response: This Draft RMP/EIS does not authorize the retirement of grazing permits and their automatic reallocation to wildlife. If such an action were to be proposed in the future, a separate NEPA document would be prepared to analyze the impacts of an amendment to the land use plan. This process is described on page 2-40 of the Draft RMP/EIS.

Comment: *Of particular concern is the purported transfer of livestock AUMs in the Henry Mountains area to bison. It has long been the County's position that transfers were and are illegal.*

Response: This Draft RMP/EIS does not authorize the retirement of grazing permits and their automatic reallocation to bison or other wildlife. If such an action were to be proposed in the future, a separate NEPA document would be prepared to analyze the impacts of an amendment to the land use plan. This process is described on page 2-40 of the Draft RMP/EIS.

Garfield County

Comment: *Section 1.5.1 should be updated to include existing state law and Garfield County's 2007 General Management Plan Amendment.*

Response: The BLM RFO is aware that Garfield County updated its general management plan in 2007. The updated plan has been reviewed and considered.

Comment: *1. Failure to identify and/or depict known routes under Garfield County's jurisdiction. 2. Failure to identify routes asserted to be under BLM jurisdiction. 3. Failure to consider road repair, road rehabilitation, road construction, and maintenance standards appropriate to transportation facilities within the field office. 4. Intentionally omitting transportation facilities that may be in conflict in certain alternatives, while including them for closure in others.*

Response: As described in the Draft RMP/EIS, the BLM used a variety of methods to inventory existing routes/ways within the RFO for consideration in the planning process, including global positioning system data (when available), data provided by the counties, map and orthophoto data, and staff/cooperator knowledge. Based on this inventory, the BLM identified 4,380 miles of routes/ways (Map 3-10 of the Draft RMP/EIS) within the RFO. It should be noted that route designations are implementation decisions and that the resulting transportation network could change over time. Management direction for OHVs is provided in 43 CFR 8340, BLM Manual 8340, and the BLM National OHV Management Strategy. Nothing in this RMP extinguishes any valid ROW, or alters in any way the legal rights the State of Utah and Garfield, Piute, Sanpete, Sevier and Wayne counties have to assert and protect RS 2477 rights, and to challenge in federal court or other appropriate venue any use restrictions imposed by the RMP that they believe are inconsistent with their rights.

Comment: *5. Failure to disclose lands being considered for wilderness management are classified as semi-primitive motorized or roaded natural.*

Response: The optional BLM management tool Recreation Opportunity Spectrum (ROS) discloses land classifications. RFO has not yet developed an optional ROS classification. Therefore, the RMP defaults back to the best available data.

Comment: *6. Application of the restrictive VRM classes without analysis or consideration of less restrictive classes.*

Response: BLM is required by FLPMA to manage for scenic resources. BLM meets this responsibility through the VRM program. VRM classes (BLM-H-8431) are based on the VRI (BLM-H-8410). The "Cumulative Impacts" Section 4.7.4.1.6 of the DRMP/DEIS analyzes the impacts to visual resources from past, present, and reasonably foreseeable future actions on non-federal lands. The Preferred Alternative in the Draft RMP/EIS and the Proposed RMP would only designate VRM Class III or IV in and immediately adjacent to the Covenant Field.

Comment: *7. Failure to comply with the memorandum of understanding regarding participation of cooperating agencies. 8. Failure to provide opportunities for cooperating agencies to review draft documents prior to releasing them to the public. Garfield County asserts that many of these practices lack objectivity, integrity, and constitute a violation of federal, state and local law.*

Response: Cooperating agency status was extended to federal, state, and local agencies, including Garfield County. The BLM RFO held regular meetings with Garfield County during the development of the Draft RMP/EIS. While Garfield County asserts that the BLM lacks objectivity and integrity, BLM asserts that it has complied with the MOU and has met the intent of federal, state, and local law. BLM will continue to involve cooperating agencies during the planning process. BLM conducted a consistency review between Garfield County General Management Plan and the Draft RMP/EIS.

Comment: *The State of Utah will be providing summaries and copies of these studies as they are completed. Garfield County requests that the BLM considers this information as you prepare the Final RMP and Final EIS. The studies may include but not be limited to: The Utah Public Lands Study, The Utah Recreational Off-Highway Vehicle Use Study, Dependency on and Alternatives to Public Land Grazing by Operators in Utah, Review of the Socioeconomic Analysis in the Draft Environmental Impact Statement Prepared by the USDI-Bureau of Land. Management Richfield Field Office, The Structure and Economic Impact of Utah's Oil and Gas Exploration and Production Industry: Phase I - the Uinta Basin, and Phase IT Carbon and Emery Counties. The Utah Public Lands study is included as Exhibit 1.*

Response: On Jan 28, 2008, The BLM RFO received several studies (or portions of studies) from The State of Utah including:

• Utah State University, 2007, Utah Public Lands Study: Key Social Survey Findings for Garfield, Piute, Sanpete, Sevier, and Wayne Counties;

• University of Utah, 2007, The Structure and Economic Impact of Utah's Oil and Gas Exploration and Production Industry Phase I – The Uinta Basin;

• University of Utah, November 2007, The Structure and Economic Impact of Utah's Oil and Gas Exploration and Production Industry Phase II – Carbon and Emery Counties;

• Utah State University, October 2006, Review of the Socioeconomic Analysis in the Draft EIS prepared by the USDI – BLM RFO (sometimes referred to as the Six County Association of Governments (AOG) study); and

• (Portions of) Utah State University, publication date unknown, Trend Information for the Richfield RMP: Livestock Industry Issues.

The State of Utah also provided a copy of Wayne, Sevier, and Garfield Counties' proposal concerning OHV use in the Factory Butte area titled January 21, 2008 Draft of Counties' Comments Re Factory Butte Recreation Plan: Comments of Wayne, Sevier, and Garfield Counties Regarding Motorized Recreation Plan Around the Factory Butte Area in Wayne County. BLM has reviewed the studies that The State of Utah provided. The Utah Public Lands Study: Key Social Survey Findings for Garfield, Piute, Sanpete, Sevier, and Wayne Counties was considered for insights into local community social values. The BLM acknowledges the currency and relevance of several of the study's findings, and has incorporated them in appropriate sections of Chapters 3 and 4. However, as the study suggests, interpretations are best done for the State of Utah as whole rather than at the county level because of the small number of respondents in some counties such as Piute and Wayne Counties.

The University of Utah's The Structure and Economic Impact of Utah's Oil and Gas Exploration and Production Industry Phase I - The Uinta Basin and Phase II - Carbon and Emery Counties studies were found to have no information which would have altered the approach taken in the economic impact analyses of Chapter 4 in the DRMP/DEIS. The BLM acknowledges that there are important fiscal impacts from oil and gas activities, and these have been incorporated in the PRMP/FEIS.

The AOG study expressed concerns with the analyses of livestock grazing, oil and gas production, socioeconomic groups (or "neighborhoods"), and OHV use in the counties. The AOG study was a critique of the original DEIS; the current, public DEIS has been modified considerably, and has taken into account, directly or indirectly, many of the concerns expressed in the original AOG critique. Sec. 1502.2 Implementation of the CEQ regulations sets forth how the BLM is to prepare environmental impact statements following: "(a) Environmental impact statements shall be analytic rather than encyclopedic. (b) Impacts shall be discussed in proportion to their significance. There shall be only brief discussion of

other than significant issues. As in a finding of no significant impact, there should be only enough discussion to show why more study is not warranted. (c) Environmental impact statements shall be kept concise and shall be no longer than absolutely necessary to comply with NEPA and with these regulations. Length should vary first with potential environmental problems and then with project size. (d) Environmental impact statements shall state how alternatives considered in it and decisions based on it will or will not achieve the requirements of sections 101 and 102(1) of the Act and other environmental laws and policies. (e) The range of alternatives discussed in environmental impact statements shall encompass those to be considered by the ultimate agency decisionmaker. (f) Agencies shall not commit resources prejudicing selection of alternatives before making a final decision (Sec. 1506.1). (g) Environmental impact statements shall serve as the means of assessing the environmental impact of proposed agency actions, rather than justifying decisions already made." Based on CEQ Sec. 1502.2 BLM's policies and guidelines require BLM to analyze the impacts of significant differences from the current situation (i.e. Alternative N: No Action). With respect to the grazing analysis, given that the percent change in AUMs across alternatives is only 0.7 percent, there is no need to do the depth of livestock grazing analysis suggested by the AOG. Furthermore, the preferred alternative shows no significant difference from the current situation, and therefore there is no significant impact from BLM decisions reached in the plan. The BLM acknowledges the planning area contains distinct socioeconomic "neighborhoods" that likely have different ties to the BLM lands, and would likely experience differential impacts from BLM management changes. A land use plan is a landscape level plan addressing BLM actions on the entire planning area. This focus is not intended to deny that real differences exist among the various communities and groups within the planning area. The plan takes a broader view. The BLM is unaware of any data suggesting that a "neighborhood" level analysis would have affected the decisions reached in the plan. In developing land use plans, the BLM is mandated by FLPMA to observe the principles of multiple use and sustained yield. FLPMA defines multiple use as "the management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people…the use of some land for less than all of the resources, a combination of balanced and diverse resource uses that takes into account the long term needs of future generations for renewable and nonrenewable resources….with consideration given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output".

The BLM used the scoping process to explore and objectively determine a reasonable range of alternatives that best addressed the issues, concerns, and alternatives identified by the public. As a result, five alternatives were identified (including the No Action Alternative) for further analysis. Each alternative considers various levels or degrees of resource use or resource protection to give the public the ability to fully compare the consequences of each management prescription or action. Alternative A favors mineral development over protection of resources. Alternative C of the Draft RMP/EIS favors the protection of resources over the extraction of mineral development. Alternative D is the same as Alternative C except it includes management of lands with wilderness characteristics to preserve those characteristics. Alternative B is designed to be a balance between mineral development and protection of resources. Table 2.1 in the Richfield DRMP/DEIS provides in comparative form the management actions associated with each alternative. Portions of the Trend Information for the Richfield RMP: Livestock Industry Issues expressed additional livestock issues such as a desire for flexible livestock grazing management provisions. The BLM objectively determined a reasonable range of alternatives that best addressed the issues, concerns, and alternatives identified by the public including BLM management of livestock grazing. Alternative A would have an additional 1.079 AUMs and 36,950 acres available for livestock grazing. There would be no change in livestock grazing management from current management under any of the other alternatives.

Comment: *The Final RMP should contain and rely on a more aggressive, robust monitoring program so resource managers and users can communicate, learn, assign responsibilities, and use adaptive management to meet land health objectives.*

Response: RFO would continue to comply with BLM policies, including Fundamentals of Standards for Rangeland Health for Grazing Administration, and Utah's Standards for Rangeland Health for Livestock Grazing. Rangeland health would be assessed according to the Standards for Rangeland Health, which would provide strategies to achieve standards and other desired resource conditions and management objectives (See Draft RMP/EIS p. 4–2).

Comment: *It should also be noted, Garfield County believes the BLM should only employ the term "critical habitat" when referring to the legal habitat designations for endangered and threatened species under the Endangered Species Act. The County also calls upon the BLM to use the "crucial habitat" designations mapped by the Division of Wildlife Resources solely as descriptive wildlife habitat characterizations and not as exclusion zones for other multiple uses. The County also questions the practice of altering these designations from alternative to alternative. Crucial habitat is defined based on DWR's wildlife inventories and may be refined or altered by the State as conditions require.*

Response: During the development of the Draft RMP/EIS, Division of Wildlife Resources (DWR) dropped using the term "critical" and formulated a new connotation for "crucial." Also, the term "designated critical habitat" should only be used in reference to species listed as threatened or endangered under the Endangered Species Act. The Final RMP/EIS has been changed to correct the issues discussed above.

Comment: *Criteria used by the BLM are inconsistent with the Garfield County General Management Plan and with suggestions made by the County throughout the planning process.*

Response: The BLM is aware that there are specific county and state plan decisions relevant to aspects of public land management that are discrete from, and independent of, federal law. However, the BLM is bound by federal law. The FLPMA requires that the development of an RMP for public lands must be coordinated and consistent with county plans, to the maximum extent possible by law, and inconsistencies between federal and non-Federal Government plans be resolved to the extent practical (FLPMA, Title II Sec. 202 (c)(9)). As a consequence, where state and local plans conflict with federal law, there will be an inconsistency that cannot be resolved or reconciled.

Thus, while county and federal planning processes, under FLPMA, are required to be as integrated and consistent as practical, the federal agency planning process is not bound by or subject to county plans, planning processes, or planning stipulations. The BLM will identify these conflicts in the Proposed RMP/Final EIS, so that the state and local governments have a complete understanding of the impacts of the Proposed RMP on state and local management options. A consistency review of the Proposed RMP with the state and county master plans is included in Chapter 5.

Comment: *It is Garfield County's policy that the suitability determination phase is the proper time to begin analysis concerning any potential federal reserved water rights. At a minimum, Garfield County calls upon the BLM to catalog all valid, existing water rights which may be affected by any Wild and Scenic River eligibility or suitability designation, identify the maximum, minimum and anticipated impacts to said water rights and identify potential solutions to all potential water right conflicts.*

Response: The Wild and Scenic Rivers Act infers a federal reserved water right upon designation. However, it does not quantify the right other than to place limitations on it. The act states that it shall not be construed as a reservation for purposes other than those specified in the act, or in quantities greater than necessary to accomplish these purposes. The amount of the federal right will therefore depend on the river's flow, the values for which the river is being protected, and the unappropriated quantities in the

river. It would be adjudicated through the state and would be junior to any rights existing prior to the date of designation (see Draft RMP/EIS Appendix 3).

Comment: *Garfield County found the analyzed tributaries lacked outstandingly remarkable values, failed to meet eligibility and suitability criteria and were dry at the time of analysis. On the ground evidence indicated absence of water for a significant period. For these reasons, Garfield County opposes inclusion of the Dirty Devil River's tributaries in the Wild and Scenic Rivers System.*

Response: Federal law takes precedence over others: Section 16(b) of the Wild and Scenic River Act defines a river as "a flowing body of water or estuary, or a section, portions, or tributary thereof, including rivers, streams, creeks, runs, rills, kills, and small lakes." For purposes of evaluation, the volume of water flow need only be sufficient to sustain or complement the identified resource values; rivers with intermittent or non-perennial flows already exist within the national river system.

Comment: *Non-WSA lands with wilderness characteristics should not be given the preferential treatment of having their own alternative. This gives such lands a greater weight/value than other values, uses and needs. Garfield County objects to BLM's stand-alone alternative for managing non-WSA lands with wilderness characteristics and asserts that such practice is a violation of BLM's policy, program and planning procedures. Even if BLM has such authority, it is disingenuous, arbitrary, and capricious to select one resource use for preferential treatment. In order to provide a full range of alternatives, the BLM must evaluate all other resource values, uses, and needs in a similar fashion.*

Response: The BLM's authority for managing lands to protect or enhance wilderness characteristics comes directly from FLPMA Section 202 (43 U.S.C. §1712). This section of BLM's organic statute gives the Secretary of the Interior authority to manage public lands for multiple use and sustained yield. Nothing in this section constrains the Secretary's authority to manage lands as necessary to "achieve integrated consideration of physical, biological, economic, and other sciences." (FLPMA, Section 202(c)(2) [43 U.S.C. §1712(c)(2)]) Further, FLPMA makes it clear that the term "multiple use" means that not every use is appropriate for every acre of public land and that the Secretary can "make the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use…" (FLPMA, Section 103(c) [43 U.S.C. §1702(c)]) The FLPMA intended for the Secretary of the Interior to use land use planning as a mechanism for allocating resource use, including wilderness character management, among the various resources in a way that provides uses for current and future generations. In addition, the BLM's *Land Use Planning Handbook* (H-1601-1) directs BLM to "identify decisions to protect or preserve wilderness characteristics (naturalness, outstanding opportunities for solitude, and outstanding opportunities for primitive and unconfined recreation), including goals and objectives to protect the resource and management actions necessary to achieve these goals and objectives. For authorized activities, include conditions of use that would avoid or minimize impacts to wilderness characteristics." See IM 2003-275.

Comment: *Garfield County insists that the BLM perform a cumulative analysis across agency boundaries within the County, the Richfield Field Office, and region to analyze and compare outstanding opportunities for solitude and primitive recreation.*

Response: 40 CFR 1508.7 and 40 CFR 1508.8 require BLM to address cumulative impacts, but non-WSAs with wilderness characteristics are not compared one against each other, rather each against a scale.

Comment: *In addition to analysis required by the County's General Management Plan, Garfield County also calls upon BLM to provide a detailed explanation of the rationale and authority for management of lands solely because of wilderness characteristics, and why such management does not circumvent the provisions of the statutorily required wilderness review process. Further, the BLM must fully disclose the rationale and evidence which it believes supports a changed finding for those lands found not to have*

wilderness characteristics in the first survey in the late 1970s and early 1980s. Such rationale and evidence must contain a discussion of the detailed criteria used, nature and extent of the review, detailed field notes, and all other relevant evidence and legal reasoning. See 43 U.S.C. § 1701(1) and Utah Code § 63-38d-401(6)(b).

Response: See Utah v. Norton. Refer to IMs 2003-274 and 275 for guidance regarding interpretation of the Utah v. Norton wilderness lawsuit settlement. See the *Land Use Planning Handbook*, H-1601-1, Section II, "Land Use Plan Decision." See Section 201 of FLPMA. All background information is available for review in the RFO. All rationale for the findings is included in the appendix of the handbook. BLM is in compliance with Utah v. Norton for reasons stated above. FLPMA specifically identifies "scenic values," "outdoor recreation," and other resource values as resources for inventory and management. See also 43 CFR 1711.

Comment: *In particular, BLM should not exercise its authority under section 202 of FLPMA in a manner that establishes, manages or otherwise treats public lands as wilderness unless those lands were congressionally designated as wilderness or were previously designated as wilderness study areas pursuant to section 603 of FLPMA.*

Response: BLM's authority for managing lands to protect or enhance wilderness characteristics comes directly from FLPMA Section 202 (43 U.S.C. §1712). This section of BLM's organic statute gives the Secretary of the Interior authority to manage public lands for multiple use and sustained yield. Nothing in this section constrains the Secretary's authority to manage lands as necessary to "achieve integrated consideration of physical, biological, economic, and other sciences." FLPMA, Section 202(c)(2) (43 U.S.C. §1712(c)(2)). Further, FLPMA makes it clear that the term "multiple use" means that not every use is appropriate for every acre of public land and that the Secretary can "make the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use…" FLPMA, Section 103(c) (43 U.S.C. §1702(c)). FLPMA intended for the Secretary of the Interior to use land use planning as a mechanism for allocating resource use, including wilderness character management, among the various resources in a way that provides uses for current and future generations. BLM has long acknowledged that FLPMA Section 603 (43 U.S.C. §1782) requiring a one-time wilderness review has expired. All current inventory of public lands is authorized by FLPMA Section 201 (43 U.S.C. §1711). In September 2006, the Utah District Court affirmed that the BLM retained authority to protect lands it determined to have wilderness characteristics in a manner substantially similar to the manner in which such lands are protected when protected as WSAs.

Comment: *Section 3.3.12 on page 3-58 states "… units that are contiguous with federal lands with wilderness characteristics were evaluated for naturalness alone. Opportunities for solitude and primitive recreation were assumed to be present in association with the larger contiguous area." In contrast the Utah BLM's Statewide Wilderness Final Environmental Impact Statement (a multiyear, detailed study) determined and documented that only 24% of the land in the Mt. Pennell WSA had outstanding opportunities for solitude and 24% had outstanding opportunities for primitive recreation. Fiddler Butte had values of 35% and 45% respectively. In spite of the BLM's own determinations, the Richfield RMP assumed wilderness characteristics were present when, in the case of Mt. Pennell, it was three times as likely that wilderness characteristics were absent.*

Response: The evaluations completed by the RFO document the quality of all wilderness characteristic values including naturalness and outstanding opportunities for solitude and primitive recreation. The text within Section 3.3.12 has been corrected.

Comment: *BLM's latest reinventory effort contradicts those findings based on assumption, proximity to WSAs, and speculative analysis.*

Response: As part of its wilderness characteristics inventory maintenance, BLM used a combination of field checks, Interdisciplinary Team review of data such as range files, county and BLM GIS data, and review of high- resolution aerial photographs. The BLM's findings are described in the 1999–2003 wilderness reinventory documentation as well as the wilderness characteristics review process (findings from this review are available on the RFO planning website, and in the administrative record). The BLM is satisfied that it has used a high-standard approach to public land inventory and it stands by its findings, particularly those findings that involve wilderness characteristics inventory maintenance.

Comment: *Wilderness inventory unit number UT - 050 - 252, Clay Point is substantially identical to the Bullfrog Creek area characterized as containing 33,700 acres of wilderness characteristics. The Clay Point Unit Evaluation states the area obviously and clearly does not have potential for wilderness, based on the following rationale: This unit is heavily intruded by penetrating roads and roadways used in connection with grazing activities. Extensive stock watering reservoir development has also detracted from the naturalness of the unit. While some of the larger canyons may provide some opportunity for solitude or a primitive, unconfined type of recreation, these opportunities would be limited and somewhat less than "outstanding." A map accompanies the evaluation and depicts numerous roads and reservoirs within the unit boundary. BLM's current analysis is inconsistent with and contradicts the Wilderness Inventory Situation Evaluation completed in February of 1979.*

Response: The Clay Point area was evaluated in 1979 and 1996 to 1999 and was found not to possess wilderness characteristics. As part of BLM's wilderness characteristics inventory maintenance, BLM performed a combination of data and onsite reviews. This included specific field inspections, Interdisciplinary Team review of data such as range files, county and BLM GIS data, and high-resolution aerial photographs. The BLM's findings are described in the 1999–2003 wilderness reinventory documentation, as well as the 2007 wilderness characteristics review process (findings from this review are available on the RFO planning website, and in the administrative record). The BLM is satisfied that it has used a high-standard approach to public land inventory and it stands by its findings, particularly those findings that involved wilderness characteristics inventory maintenance.

Comment: *Wilderness inventory unit number UT - 50 - 253, Long Canyon corresponds to the Long Canyon non-WSA lands with wilderness characteristics. Originally, the initial inventory identified that the area may contain wilderness characteristics. The lands were carried forward to the intense inventory phase of the analysis. During the intensive inventory phase of the analysis, it was determined that the Long Canyon area did not offer outstanding opportunities for solitude or primitive unconfined type of recreation. The final determination completed in November of 1980 stated, " The unit was not proposed as a WSA due to lack of outstanding opportunities. The area lacks topographic and vegetative screening and primitive recreation opportunities are limited. No information was provided to change this proposal. It is recommended that this unit be dropped from further study." Without any documentation or analysis, other than the assumptions that are described in the RMP, the area now suddenly contains wilderness characteristics.*

Response: The Long Canyon area was first inventoried in 1979 and reinventoried in 1996 and some of the area was found not to possess wilderness characteristics. The reinventory in 1996 to 1999 also found that some of the area has wilderness characteristics and BLM stands by this determination. Garfield County was a participant in the 1996 to 1999 reinventory effort. Documentation is found in the appendices and case files in the RFO.

Comment: *BLM also failed to provide opportunities for Cooperating Agencies to be a full partner in alternative preparation, analysis, review of environmental analysis, and other aspects relating to Cooperating Agency status. One meeting was held where the BLM described what it was going to do. However, no effort was made to engage cooperators, consider their input, or to be consistent with the cooperators' policy, program or General Management Plans. Garfield County finds that such actions*

violate the MOU establishing Cooperating Agency status and constitute a failure to consider all reasonable alternatives. Garfield County calls upon the BLM to work with cooperators to resolve these issues and to use cooperators' information, proposals, an analysis to the maximum extent possible, consistent with its responsibilities as Lead Agency.

Response: Cooperating agency status was extended to federal, state, and local agencies, including Garfield County. The BLM provided opportunities for the cooperating agencies input. The BLM RFO held regular meetings with Garfield County during the development of the Draft RMP/EIS. the BLM asserts that it has complied with the MOU and has met the intent of federal, state, and local law. BLM will continue to involve cooperating agencies during the planning process. However, BLM makes the final land use planning decisions based on a balance of input from cooperating agencies, stakeholders, public comments, and the limitations imposed by federal law.

Comment: *In order to assist the BLM in their analysis, Garfield County is providing the following: Exhibit 2. Wilderness Table 3. A summary of BLM's findings as presented in the Statewide Wilderness Final EIS. Exhibit 3. A photocopy composite of the original inventory areas and lands designated by the Richfield field office as non-WSA lands with wilderness characteristics. Exhibit 4. Organic Act Directive number 78 - 61, change 2 Exhibit 5. Organic Act Directive number 78 - 61, change 3 Exhibit 7. Wilderness Inventory Situation Evaluation for Clay Point Exhibit 8. Wilderness Inventory Summary Sheet and accompanying data for Long Canyon.*

Response: The BLM is aware of the following items submitted by the commenter: Exhibit 2. Wilderness Table 3. A summary of BLM's findings as presented in the Statewide Wilderness Final EIS. Exhibit 3. A photocopy composite of the original inventory areas and lands designated by the RFO as non-WSA lands with wilderness characteristics. Exhibit 4. Organic Act Directive number 78 - 61, change 2 Exhibit 5. Organic Act Directive number 78 - 61, change 3 Exhibit 7. Wilderness Inventory Situation Evaluation for Clay Point Exhibit 8. Wilderness Inventory Summary Sheet and accompanying data for Long Canyon. These items were received late in the planning process and were considered by the BLM in preparing the Proposed RMP/Final EIS.

Comment: *It is in the best interests of the United States as well as the State of Utah that the Final RMP create a robust and effective program for land tenure adjustments.*

Response: BLM's mandate is to retain lands in federal management unless the lands meet the criteria specified in FLPMA Section 203 for sale and other disposal actions as provided for under other authorities (such as exchange, R&PP) as discussed under the “Lands and Realty Common to All Alternatives” section in Chapter 2, Table 2-18 of the Draft RMP/EIS.

Comment: *Garfield County finds the Draft RMP fails to address adequately these two major issues: The impact of BLM management decisions on state trust lands, and the need for a substantially more robust program for land tenure adjustments between the BLM and the State of Utah. BLM has an obligation to include in its planning an effective and timely means of addressing the impact of federal land actions on in-held school trust lands.*

Response: Regarding the first issue, an analysis of impacts on state trust lands was included under the socioeconomics section of the Draft RMP/EIS (Section 4.6.1). Regarding the second issue raised, during processing of any proposed land tenure adjustment, BLM is required through the planning process to notify and coordinate with adjacent landowners and other interested parties. BLM's mandate is to retain lands in federal management unless the lands meet the criteria specified in FLPMA Section 203 for sale and other disposal actions as provided for under other authorities (such as exchange, R&PP) as discussed under the “Lands and Realty Common to All Alternatives” section in Chapter 2, Table 2-18 of the Draft RMP/EIS.

Comment: *As part of the planning process, Garfield County submitted detailed maps depicting County rights that required access and insisted BLM accommodate the County's right by identifying reasonable routes to the specified sections. The RMP does not comply with Garfield County's request and has deleted the County's rights and adjoining access from RMP maps. A photocopy of the original submittal is included as Exhibit 9.*

Response: As described in the Draft RMP/EIS, the BLM used a variety of methods to inventory existing routes/ways within the RFO for consideration in the planning process, including Global Positioning System data (when available), data provided by the counties, map and orthophoto data, and staff/cooperator knowledge. Based on this inventory, the BLM identified 4,380 miles of routes/ways (Map 3-10 of the Draft RMP/EIS) within the RFO. It should be noted that route designations are implementation decisions and that the resulting transportation network could change over time. Management direction for OHVs is provided in 43 CFR 8340, BLM Manual 8340, and the BLM National OHV Management Strategy. Nothing in this RMP extinguishes any valid ROW, or alters in any way the legal rights the State of Utah and Garfield, Piute, Sanpete, Sevier and Wayne counties have to assert and protect RS 2477 rights, and to challenge in Federal court or other appropriate venue any use restrictions imposed by the RMP that they believe are inconsistent with their rights.

Comment: *It should also be noted that Garfield County has been informed by BLM officials that route designations depicted in alternative C and were derived solely from Southern Utah Wilderness Alliance submittals and did not consider coordination with cooperating agencies. It should also be noted that alternative D was developed entirely by the BLM without cooperating agency coordination. Both of these actions are a violation of the Memorandum of Understanding between Garfield County and the BLM defining their relationship and duties in the development of the Richfield RMP. The MOU states the BLM will Include the Cooperating Agency as a full partner in alternative preparation, analysis, review of environmental analysis of the alternatives, and all other aspects relating to Cooperating Agency status for the RMP.*

Response: The counties participated in the creation of the draft alternatives. CEQ regulations (40 CFR 1502.1) require BLM to consider reasonable alternatives, which would avoid or minimize adverse impacts or enhance the quality of the human environment, based on the nature of the proposal and facts in the case (CEQ 40 Most Asked Questions 1b.). The counties interests were considered in the range of alternatives. While there are many possible management prescriptions or actions, the BLM used the scoping process to determine a reasonable range alternatives that best addressed the issues, concerns, and alternatives identified by the public.

An Interdisciplinary team of resource specialist, with on-the-ground knowledge of the planning area, analyzed the current management situation, desired conditions, the uses and activities to create a framework to resolve the issues raised through the development of the alternatives. A balanced approach consistent with FLPMA’s principles of “multiple use” was a key component of the analysis.

The BLM RFO held regular meetings with Garfield County during the development of the Draft RMP/EIS. the BLM asserts that it has complied with the MOU and has met the intent of federal, state, and local law. BLM will continue to involve cooperating agencies during the planning process. However, BLM makes the final land use planning decisions based on a balance of input from cooperating agencies, stakeholders, public comments, and the limitations imposed by federal law.

Comment: *It should be noted that the vast majority of roads in Garfield County crossing BLM lands are under Garfield County jurisdiction. On July 2, 1993, in a response to Garfield County's FOIA request, the BLM identified approximately 20 roads as all of the routes in the Richfield Field Office that BLM claimed to be under federal jurisdiction. Notwithstanding Garfield County's objection that many of the 20 roads*

identified by the BLM cross private and state lands over which the County has a right of way and BLM does not, Garfield County questions the ability of the BLM to implement travel management actions.

Response: As specified in the Draft RMP/EIS, page 1-10, addressing RS 2477 assertions is beyond the scope of this planning effort. However, nothing extinguishes any ROW or alters in any way the legal rights the state and counties have to assert and protect RS 2477 rights.

Comment: *Impacting the highways without County approval is a violation of State law.*

Response: As specified in the Draft RMP/EIS, page 1-10, addressing RS 2477 assertions is beyond the scope of this planning effort. However, nothing extinguishes any ROW or alters in any way the legal rights the state and counties have to assert and protect RS 2477 rights.

Comment: *Unilateral action to restrict, close or impact County roads is a failure to be subject to valid existing rights, is a violation of collaborative rights doctrine and is not consistent to the maximum extent allowed by law with Garfield County's General Management Plan.*

Response: The document has been changed to remove the decision under VRM that identifies VRM Class IV setbacks for roads.

Comment: *BLM should evaluate habitats on a case-by-case basis to identify those that would be suitable for other management scenarios.*

Response: The BLM considered a wide range of alternatives including open area. For example, under Alternative N (No Action Alternative), 77 percent of the decision area is open to OHV use.

Comment: *Garfield County has identified and designated an OHV route system by ordinance. The BLM must be consistent to the maximum extent allowed by law with the local ordinance.*

Response: The BLM RFO is aware that the counties have updated their general management plans in 2007. The revised general management plan was provided to BLM late in the planning process and may need to be reviewed further in development of the Proposed RMP/Final EIS. The BLM is aware that there are specific county and state plan decisions relevant to aspects of public land management that are discrete from, and independent of, federal law. However, BLM is bound by federal law. The FLPMA requires that the development of an RMP for public lands must be coordinated and consistent with county plans, to the maximum extent possible by law, and inconsistencies between federal and non-Federal Government plans be resolved to the extent practical (FLPMA, Title II Sec. 202 (c)(9)). As a consequence, where state and local plans conflict with federal law, there will be an inconsistency that cannot be resolved or reconciled. Thus, while county and federal planning processes, under FLPMA, are required to be as integrated and consistent as practical, the federal agency planning process is not bound by or subject to county plans, planning processes, or planning stipulations. The BLM will identify these conflicts in the Proposed RMP/Final EIS, so that the state and local governments have a complete understanding of the impacts of the Proposed RMP on state and local management options. A consistency review of the Proposed RMP with the state and county master plans is included in Chapter 5.

Comment: *While we recognize the field office's efforts to date, the DEIS does not address consistency between neighboring jurisdictions' management objectives. We encourage the BLM to analyze the management objectives applicable to adjacent lands. We also encourage the BLM to disclose, as part of the Final EIS, specific areas of management conflict and steps the Richfield Field Office will take to resolve conflicting management objectives.*

Response: RFO has coordinated with the neighboring field offices on developing consistent management objectives. The BLM analyzed the management objectives applicable to adjacent lands and considered them in the development of the Proposed RMP.

Comment: *These RFDSs and alternatives constitute reasonably foreseeable actions and must be considered in cumulative impact analysis. They indicate how much development is anticipated to occur over the lifetime of the plans. Other federal agencies within the region may have ongoing plans or projections for management actions on their lands. Reasonably foreseeable future actions should be identified and considered as part of the analysis.*

Response: Section 4.7.3 of the Draft RMP/EIS includes a list of reasonably foreseeable future actions that were considered in the cumulative impact analysis. Projections, which have been developed for analytical purposes only, are based on current conditions and trends and represent a best professional estimate.

Comment: *To the extent that management actions are inconsistent with Garfield County's General Management Plan, Garfield County objects to the development of alternatives and analysis without County participation and finds it to be a violation of the Memorandum of Understanding associated with cooperating agency status, FLPMA and NEPA.*

Response: Cooperating agency status was extended to federal, state, and local agencies, including Garfield County. The BLM RFO held regular meetings with Garfield County during the development of the Draft RMP/EIS. BLM asserts that it has complied with the MOU and has met the intent of federal, state, and local law. BLM will continue to involve cooperating agencies during the planning process. However, BLM makes the final land use planning decisions based on a balance of input from cooperating agencies, stakeholders, public comments, and the limitations imposed by federal law.

The BLM RFO is aware that the counties have updated their general management plans in 2007. The revised general management plan was provided to BLM late in the planning process and may need to be reviewed further in development of the Proposed RMP/Final EIS. The BLM is aware that there are specific county and state plan decisions relevant to aspects of public land management that are discrete from, and independent of, federal law. However, the BLM is bound by federal law. The FLPMA requires that the development of an RMP for public lands must be coordinated and consistent with county plans, to the maximum extent possible by law, and inconsistencies between federal and non-Federal Government plans be resolved to the extent practical (FLPMA, Title II Sec. 202 (c)(9)). As a consequence, where state and local plans conflict with federal law there will be an inconsistency that cannot be resolved or reconciled. Thus, while county and federal planning processes, under FLPMA, are required to be as integrated and consistent as practical, the federal agency planning process is not bound by or subject to county plans, planning processes, or planning stipulations. The BLM will identify these conflicts in the Proposed RMP/Final EIS, so that the state and local governments have a complete understanding of the impacts of the Proposed RMP on state and local management options. A consistency review of the Proposed RMP with the state and county master plans is included in Chapter 5.

Comment: *BLM asserts it will honor all valid, existing rights. However, it appears that this statement may only apply to oil and gas, minerals, and grazing; no mention is made of water rights. Under Utah law, approved and perfected water rights are considered real property. BLM actions may affect the value of this real property. Because of this, the State Engineer recommends that the BLM consider the impact its actions may have on water rights in general and non-BLM water rights in particular.*

Response: BLM is obligated by law to honor valid, existing rights. Similarly, holders of valid, existing rights are obligated to honor federal laws regarding the use of federal lands for the exercise of those rights. BLM does not foresee frequent situations in which BLM's obligations under federal law would cause the agency to take actions that would prevent the holders from fully exercising their valid existing rights. BLM works diligently with the owners of valid, existing rights to prevent such situations from occurring. If the holder of a valid, existing right believes the BLM has taken an action that prevents the

exercise of that right, the proper venue for determining equitable compensation or mitigation is in a court of valid jurisdiction, not within the context of a land use plan.

Comment: *Failure to evaluate valid existing / RS 2477 rights and adopting planning scenarios that impact those rights is a failure to comply with the plans basic assumption that it is subject to valid and existing rights. Garfield County calls upon the BLM to work cooperatively with potential stakeholders prior to adopting any management action that impacts potential valid existing rights.*

Response: As specified in the Draft RMP/EIS, page 1-10, addressing RS 2477 assertions is beyond the scope of this planning effort. However, nothing extinguishes any ROW or alters in any way the legal rights the state and counties have to assert and protect RS 2477 rights.

Comment: *The RMP is replete with examples where the BLM failed to consider all reasonable alternatives and where the BLM failed to provide adequate rationale for exclusion of alternatives.*

Response: The CEQ regulations (40 CFR 1502.1) require BLM to consider reasonable alternatives, which would avoid or minimize adverse impacts or enhance the quality of the human environment, based on the nature of the proposal and facts in the case (CEQ 40 Most Asked Questions 1b.). While there are many possible management prescriptions or actions, the BLM used the scoping process to determine a reasonable range alternative that best addressed the issues, concerns, and alternatives identified by the public. In addition, alternatives were considered but eliminated from detailed analysis. These alternatives are discussed in Section 2.5 of this document.

Comment: *Example 1. VRM Alternative D evaluates a scenario where the vast majority of lands in Garfield County would be managed under the most restrictive VRM classification, Class 1. Adoption of this alternative would be a radical change and would create significant negative socioeconomic impacts to Garfield County. No alternative is considered where VRM restrictions are significantly reduced from the existing levels. In addition, the BLM has failed to consider VRM classifications identified in Garfield County's general management plan, which were developed considering ROS analysis, Garfield County's goals and objectives, and consistency across agency boundaries (elements omitted in the RMP process).*

Response: The range of alternatives includes the commenter’s proposal.

Comment: *Alternative C&D consider closure of a portion of the South Hatch Canyon Road complex.*

Response: The South Hatch Canyon Road complex is open under the Proposed RMP and Draft Alternatives A and N. BLM has provided a reasonable range of alternatives. As required by NEPA, the Draft RMP/EIS analyzes the current management (Alternative N). Each alternative, except for Alternative N, represents an alternative means of satisfying the identified purpose and need, and of resolving issues. The range of alternatives began early in the RMP process, starting with the public scoping period (April 2004 through February 2005) and was further developed throughout the process in coordination with our cooperating agencies and during the public comment period.

Comment: *Example 3. During the initial wilderness inventory process for the Clay Point area, UT - 050 - 252 (now known as the Bullfrog Creek non-WSA lands with wilderness characteristics) numerous roads and roadways were identified. The presence of these roads and roadways constituted a significant intrusion on the land and served as the basis for disqualifying the area for additional wilderness study. These roads have been formally inventoried by the BLM and are depicted on original wilderness inventory maps, but they have been omitted from every alternative. Additionally, Garfield County has emphatically called upon the BLM to include all known and/or inventoried roads paths and ways on maps depicting the transportation system in the RMP. A detailed inventory of the existing routes provides the advantage of: 1) documenting baseline information from which future unauthorized routes can be evaluated, 2) limiting the network over which RS 2477 assertions / conflicts exist, 3) accurately*

identifying areas of potential resource damage, and 4) accurately depicting existing conditions. Omitting known and documented routes from the evaluation process is a failure to consider all reasonable alternatives.

Response: The BLM used a variety of data sources to provide the baseline for the route designation decisions. Disclosing new ways within WSAs is beyond the scope of this plan. The route inventory within WSAs is based on the initial wilderness inventory (1979–1990). In 1996–1999, this area was reinventoried and all existing information was reconsidered, including the routes in the Clay Point area. Substantial portions of the inventory area were found to lack wilderness characteristics because of the presence of these routes. These routes are included in the route inventory.

Comment: *If BLM excludes cooperating agencies from additional involvement in the RMP process, or if the BLM fails to consider and/or describe alternatives presented by cooperating agencies and depicted in local management plans, Garfield County considers it an intentional abrogation of federal responsibility to consider all reasonable alternatives.*

Response: The counties participated in the creation of the draft alternatives. CEQ regulations (40 CFR 1502.1) require BLM to consider reasonable alternatives, which would avoid or minimize adverse impacts or enhance the quality of the human environment, based on the nature of the proposal and facts in the case (CEQ 40 Most Asked Questions 1b.). The counties interests were considered in the range of alternatives. While there are many possible management prescriptions or actions, the BLM used the scoping process to determine a reasonable range alternatives that best addressed the issues, concerns, and alternatives identified by the public.

An Interdisciplinary team of resource specialist, with on-the-ground knowledge of the planning area, analyzed the current management situation, desired conditions, the uses and activities to create a framework to resolve the issues raised through the development of the alternatives. A balanced approach consistent with FLPMA's principles of "multiple use" was a key component of the analysis.

Comment: *The County has concerns that the BLM's identification of VRM inventory classes has led to a self effectuating class protection scheme, rather than a source of information to be considered within the proposed resource use allocation schemes within each of the Draft's alternatives.*

Response: The VRI is based on criteria that provide for the objective evaluation of a landscape. The VRI is not the on-the-ground management tool. It is used to develop the VRM classes, with consideration from other resource activities.

Comment: *In short, there is a "win-win" solution which the Counties would ask the BLM to consider as it fine tunes and finalizes the Factory Butte Recreation plan portion of the Richfield DRMP/EIS. This "win-win" compromise plan is within the parameters of the range of alternatives which have been scoped and studied in the Richfield EIS process.*

Response: BLM has considered the proposals submitted by several commenters. The commenters' proposal is included within the range of alternatives considered within the Draft RMP/EIS. The Proposed RMP/Final EIS has been revised to address the proposal and the commenters' concerns. Several surveys and clearances will be required to identify the location of specific trails. The exact location of any trails will be clearly marked. The general location of trails, kiosks, fences, and other facilities is identified in the Proposed RMP/Final EIS. The location of these facilities will be specified in activity-level planning. The area will be strictly monitored to include compliance with the plan. Following BLM policy, the RFO will take a cooperative management approach to implement the plan.

Comment: *BLM's duty under Kimball was to analyze the effects of current alternatives on any alleged wilderness characteristics that may be found in the Subject Lands, not to create a non-impairment*

management standard as to those characteristics. The DRMP/EIS would turn the Kimball decision on its head by purporting to so manage the Subject Lands.

Response: BLM's authority for managing lands to protect or enhance wilderness characteristics comes directly from FLPMA Section 202 (43 U.S.C. §1712). This section of BLM's organic statute gives the Secretary of the Interior authority to manage public lands for multiple use and sustained yield. Nothing in this section constrains the Secretary's authority to manage lands as necessary to "achieve integrated consideration of physical, biological, economic, and other sciences." FLPMA, Section 202(c)(2) (43 U.S.C. §1712(c)(2)). Further, FLPMA makes it clear that the term "multiple use" means that not every use is appropriate for every acre of public land and that the Secretary can "make the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use…" FLPMA, Section 103(c) (43 U.S.C. §1702(c)). FLPMA intended for the Secretary of the Interior to use land use planning as a mechanism for allocating resource use, including wilderness character management, among the various resources in a way that provides uses for current and future generations. BLM has long acknowledged that FLPMA Section 603 (43 U.S.C. §1782) requiring a one-time wilderness review has expired. All current inventory of public lands is authorized by FLPMA Section 201 (43 U.S.C. §1711). In September 2006, the Utah District Court affirmed that the BLM retained authority to protect lands it determined to have wilderness characteristics in a manner substantially similar to the manner in which such lands are protected when protected as WSAs. Finally, the Utah v. Norton Settlement Agreement does not affect BLM's authority to manage public lands. This agreement merely remedied confusion by distinguishing between WSAs established under FLPMA § 603 and required to be managed under § 603's non-impairment standard, and other lands that fall within the discretionary FLMPA § 202 land management process. See also IM 2003-275.

Comment: *Thus the proposal to so manage the Subject Lands squarely contradicts the BLM's own IM 2003-275.*

Response: BLM's authority for managing lands to protect or enhance wilderness characteristics comes directly from FLPMA Section 202 (43 U.S.C. §1712). This section of BLM's organic statute gives the Secretary of the Interior authority to manage public lands for multiple use and sustained yield. Nothing in this section constrains the Secretary's authority to manage lands as necessary to "achieve integrated consideration of physical, biological, economic, and other sciences." FLPMA, Section 202(c)(2) (43 U.S.C. §1712(c)(2)). Further, FLPMA makes it clear that the term "multiple use" means that not every use is appropriate for every acre of public land and that the Secretary can "make the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use…" FLPMA, Section 103(c) (43 U.S.C. §1702(c)). FLPMA intended for the Secretary of the Interior to use land use planning as a mechanism for allocating resource use, including wilderness character management, among the various resources in a way that provides uses for current and future generations. BLM has long acknowledged that FLPMA Section 603 (43 U.S.C. §1782) requiring a one-time wilderness review has expired. All current inventory of public lands is authorized by FLPMA Section 201 (43 U.S.C. §1711). In September 2006, the Utah District Court affirmed that the BLM retained authority to protect lands it determined to have wilderness characteristics in a manner substantially similar to the manner in which such lands are protected when protected as WSAs. Finally, the Utah v. Norton Settlement Agreement does not affect BLM's authority to manage public lands. This agreement merely remedied confusion by distinguishing between WSAs established under FLPMA § 603 and required to be managed under § 603's non-impairment standard, and other lands that fall within the discretionary FLMPA § 202 land management process. See also IM 2003-275.

Comment: *Managing the Subject Lands According to the Prescriptions Outlined in Alternative D Would Clash With State and Local Policies and Plans for Managing Those Lands, and Would Thus Violate the Consistency Requirement of FLPMA Section 202(c)(9).*

Response: Alternative D is within the range of alternatives considered in the Draft RMP/EIS as required by NEPA. Any of the alternatives would be implementable under federal law. FLPMA requires that the development of an RMP for public lands must be coordinated and consistent with county plans, to the maximum extent possible by law, and inconsistencies between federal and non-Federal Government plans be resolved to the extent practical (FLPMA, Title II Sec. 202 (c)(9)). As a consequence, where state and local plans conflict with federal law, there will be an inconsistency that cannot be resolved or reconciled.

Comment: *Managing the subject lands according to the prescriptions outlined in Alternative D would arbitrarily and capriciously ignore the documentation and information submitted by Garfield County, which shows the subject lands lack true wilderness character.*

Response: The BLM considered the County's inventory in developing the Proposed RMP, and based upon all available information BLM carried forward 78,600 acres (12 percent) of the 682,600 acres of non-WSA lands with wilderness characteristics identified in the Draft RMP Alternative D. The presence or absence of man-made intrusions does not mean that an area does not possess wilderness characteristics. It is the cumulative significance of these features that determines whether an area possesses wilderness characteristics. As part of its wilderness characteristics inventory maintenance, BLM used a combination of field checks, Interdisciplinary Team review of data such as range files, county and BLM GIS data, and review of high-resolution 2006 aerial photographs. Having reviewed the information submitted and determined that the information is not new and significant BLM stands by its determination.

Comment: *A proper baseline should be established that is based on average case scenarios as opposed to worse case scenarios.*

Response: The "Air Quality Impact Analysis" section of the Proposed RMP/Final EIS includes baseline emission calculations. BLM stands by the assumptions on page 4-7 of the Draft RMP/EIS: "The most conservative case assumptions for air quality were used for the qualitative analysis. When a range of activity factors was assumed, the upper limit of the range was used to complete calculations for future time frames."

Comment: *Garfield County opposes any statement in the DRMP/EIS which purports to continue to manage eligible river segments, or presumptively suitable segments, as if those segments may some day be included in the National Wild and Scenic River system. Congress conferred no such interim management authority on the BLM.*

Response: Management protection afforded rivers is found in Section 5(d) of the Wild and Scenic River Act and depends on whether the identified river segment is found eligible or suitable. River segments found eligible are managed at the discretion of the administering agency to protect free-flow, outstandingly remarkable values and tentative classification until a suitability determination is made; rivers found suitable are managed at the discretion of the administering agency for the same values and recommended classification pending congressional action or for the duration of the RMP, but not as a designated WSR, which is specified by Congress. Management prescriptions under both suitability and eligibility phases are subject to valid existing rights.

Comment: *Particularly offensive and antithetical to Utah State water law and water rights is any statement in the DRMP/EIS which purports to prohibit impoundments, diversions, channelizations and rip-rapping on any river segment in Garfield County. Garfield County grieves this provision as a frontal assault on state-administered water rights duly adjudicated under Utah's water law system and constitutes.*

Response: BLM is obligated by law to honor valid, existing rights. Similarly, holders of valid, existing rights are obligated to honor federal laws regarding the use of federal lands for the exercise of those

rights. These types of developments or improvements the commenter references are implementation-level actions that would be considered on a site-specific basis and assessed with site-specific NEPA analysis.

Comment: *Moreover, Garfield County believes that BLM's process by which it attempted to study Wild & Scenic River suitability is procedurally flawed by its failure to follow NEPA procedures and Wild and Scenic guidelines for determining suitability.*

Response: The Wild and Scenic Rivers Act of 1968 (16 U.S.C. 1271-1287) preserves "selected" rivers and their immediate environments that contain outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values "in their free-flowing condition" (16 U.S.C. 1271). The BLM evaluates identified river segments for their eligibility and suitability for designation under the Wild and Scenic Rivers Act through the RMP process; evaluations cannot be completed through the activity-level planning effort (BLM Manual 8351.06 (B). The RFO followed the Wild and Scenic Rivers Act, the Inter-agency Agreement, the Inter-agency Wild and Scenic Rivers Coordinating Council Guidelines (Wild and Scenic Rivers Reference Guide), and IM -2004-196 in determined eligibility and suitability.

Comment: *Of particular concern is any language in the DRMP/EIS that would accept whatever wildlife herd number objective which UDWR may give to BLM, if accepting that herd number means BLM has to place more active use livestock AUMs in suspension.*

Response: There is no decision in the Draft RMP/EIS that specifically links forage allocation levels to Utah Department of Wildlife Resources (UDWR) herd objectives. However, the decision in Chapter 2 of the Draft RMP/EIS does recognize DWR's responsibility to manage wildlife populations and directs future management to recognize and coordinate with UDWR on management plans.

Comment: *To the extent any alternative in the DRMP/EIS may propose to transfer those AUMs to wildlife or to watersheds, this would be counter to the aforementioned state statute, Garfield County's general plan, as well as BLM regulations that provide for non-use.*

Response: There is no decision in the Draft RMP/EIS that specifically links forage allocation levels to UDWR herd objectives.

Comment: *Any alternative in the DRMP/EIS that would purport to transfer grazing animal unit months (AUMs) to wildlife for supposed reasons of rangeland health is illogical and ignores BLM's direction for resolving such issues. There is already imputed, in each AUM, a reasonable amount of forage for the wildlife component.*

Response: There is no decision in the Draft RMP/EIS that specifically transfers AUMs to wildlife for reasons of rangeland health.

Comment: *Any grazing animal unit months that may have been reduced in the RFO planning area due to rangeland health concerns should be restored to livestock when rangeland conditions improve, not converted to wildlife use.*

Response: Per the 43 CFR 4100 regulation, suspended AUMs are restored to the operator to the amount of the suspension if conditions allow. Beyond this, AUMs are allocated to livestock or wildlife depending on the allotment objectives contained in the RMP and Rangeland Program Summary.

Comment: *Any transfer of AUMs to wildlife violates the Taylor Grazing Act, 43 U.S.C. § 315, FLPMA, 43 U.S.C. § 1742, and the terms of the Executive Orders No. 6910, 54 I.D. 539 (1934), and No. 6964 (Feb. 5, 1935), which withdrew public lands as chiefly valuable for grazing. Any such decision would also require amending the Presidential Executive Orders, which BLM cannot do, since authority to amend a withdrawal is limited to the Interior Secretary. The Tenth Circuit in Public Lands Council v.*

Babbitt, 167 F.3d 1287 (lOthCir.1999), aff'd on other grounds, 529 U.S. 728 (2000), held that BLM could not offer permits not to have domestic livestock graze public lands, since grazing permits are limited to domestic livestock. By the same token, BLM cannot purport to authorize wildlife grazing by retiring grazing permits in order to allocate the forage for wildlife. This action would also constitute a change in grazing use without following the procedures set out in the BLM grazing rules. 43 C.F.R. §§ 4110.3, 4110.4. It is also inconsistent with the grazing rules which provide for BLM to offer a vacant permit to other qualified permittees. 43 C.F.R. §4130.1-2.

Response: This Draft RMP/EIS does not authorize the retirement of grazing permits and their automatic reallocation to wildlife. If such an action were to be proposed in the future, a separate NEPA document would be prepared to analyze the impacts of an amendment to the land use plan. This process is described on page 2-40 of the Draft RMP/EIS.

Comment: *Where BLM has failed to consider resources / resource use in Garfield County and outside Richfield Field Office boundaries, Garfield County calls upon the BLM to defer to the County's General Management Plan as more detailed and accurate.*

Response: The RFO has coordinated with the neighboring field offices on developing consistent management across field office boundaries. The BLM field office boundaries are set by the Utah State office in cooperation with the Washington office. Therefore setting the boundaries would be beyond the scope of this RMP.

Comment: *Inasmuch as Alternative A moves from a open OHV use system to a designated OHV use system the statement that this alternative is the least restrictive is incorrect.*

Response: The text was updated to show that Alternative N is the least restrictive alternative.

Comment: *Garfield County is in the process of finalizing its Paleontological resource protection ordinance. The ordinance is patterned after the counties cultural resource protection ordinance and calls upon the BLM to conduct detailed inventories identifying Paleontological resources. The County is unsure how Paleontological inventories in Class I and Class II areas relate to the County's policy, program and intended General Management Plan. Garfield County calls upon the BLM to protect Paleontological resources while at the same time expanding opportunities for public use, enjoyment and interpretation.*

Response: No paleontological inventories in class I and class II areas have been proposed or required in Chapter 2 of the Draft RMP/EIS. BLM paleontological resource management policy is to identify, evaluate, and, where appropriate, protect scientifically significant paleontological resources, ensuring that proposed land uses, initiated or authorized by BLM, do not inadvertently damage or destroy these resources (BLM Manual 8270, *Paleontological Resource Management*).

Comment: *Garfield County has developed a detailed visual resource management plan and calls upon the BLM to be consistent to the maximum extent allowed by law with the County's plan. It is recognized that officially designated WSAs may need to be protected with overly restrictive management classifications until Congress acts. Garfield County's plan anticipates release of such units during the life of the plan and calls upon the BLM to be consistent to the maximum extent allowed by law with Garfield County's visual resource management plan.*

Response: The BLM RFO is aware that the counties have updated their general management plans in 2007. The revised general management plan was provided to BLM late in the planning process and was considered in development of the Proposed RMP/Final EIS.

Comment: *None of the alternatives provide increased AUMs.*

Response: It is BLM policy to monitor existing livestock use levels, forage utilization, and the trend of resource condition and make necessary adjustments on an allotment or watershed basis. These actions are activity-based actions and are part of the implementation of an RMP to ensure that Standards for Rangeland Health are met, as well the other objectives of the RMP. Regulations in 43 CFR 4130.3 require that the terms and conditions under which livestock are authorized "ensure conformance with the provisions of subpart 4180," the Standards for Rangeland Health and further 43 CFR 4130.3-1 requires that "livestock grazing use shall not exceed the livestock carrying capacity of the allotment."

It would be inappropriate and unfeasible to estimate variable levels of livestock and wildlife use and determine what specific changes to livestock and wildlife numbers and management are appropriate at the RMP planning level. Such changes would not be supportable and need to be made by considering the monitoring data on a site-specific basis. The BLM policy directs that monitoring and inventory data be evaluated on a periodic basis and that change to livestock numbers and management be made through a proposed decision under 43 CFR 4160. These implementation level decisions will be in conformance with the Goals and Objectives of the applicable RMP and must protect and enhance the conditions and uses of BLM lands.

Comment: *The County's policy, program and plan identified visitor goals and development associated with SRMA establishment. The County's plan also requires certain deliverables associated with development, infrastructure, financing, and visitation. None of the alternatives meet the County's criteria.*

Response: The Draft RMP/EIS Section 3.4.3.1, regarding RMAs, addresses the criteria that were used to identify the SRMAs. These criteria are based on BLM policies and regulations (43 CFR 8342.1). SRMAs were based on these criteria. Sahara Sands was analyzed for SRMA identification in Alternative A in conjunction with an open OHV area. The Sahara Sands area is not identified as an SRMA in the Proposed RMP.

Comment: *However, Garfield County insists the BLM has failed to fulfill its responsibility to provide for all types of recreation. Garfield County's General Management Plan has found that 3% to 5% of the County needs to be set aside for open OHV use.*

Response: The BLM considered a wide range of alternatives including open area. For example, under Alternative N, 77 percent of the decision area is open to OHV use.

Comment: *Consequently, the BLM should not identify routes for closure that are not under its jurisdiction. Furthermore, Garfield County asserts that the roads identified for closure are valid existing rights under local control. BLM's planning authority is subject to valid existing rights, and closures should not occur until final resolution of jurisdiction is complete.*

Response: As specified in the Draft RMP/EIS, page 1-10, addressing RS 2477 assertions is beyond the scope of this planning effort. However, nothing extinguishes any ROW or alters in any way the legal rights the state and counties have to assert and protect RS 2477 rights.

Comment: *Garfield County also questions the descriptions in the alternative and indicating the VRM class for all WSAs is currently Class I. The Utah BLM Statewide Wilderness Final EIS identifies many of the lands as being a different VRM class. Unless the BLM has gone through a formal planning process re-designating the VRM class, existing VRM classes should be described as contained in the BLM's wilderness document.*

Response: IM-2000-96 states "it is the Bureau position… that all WSAs should be classified as Class I, and managed according to VRM Class I management objectives until such time as the Congress decides to designate the area as wilderness or release it for other uses." The IM further explains "…the VRM management objectives are being used to support WSA management objectives. For WSAs, this is not

only about visual values as many WSAs do not necessarily contain exceptionally high scenic values. The primary objective of WSA management is to retain the WSA's natural character essentially unaltered by humans during the time it is being managed as a WSA." As the VRM I objective is to "preserve the existing character of the landscape" (BLM-H-8410), such a designation would complement WSA management as explained in the IMP.

Comment: *Garfield County also finds the BLM has failed to inventory, identifying and disclosed routes that are known to exist within WSAs and that are asserted as valid and existing rights by Garfield County.*

Response: Management of routes/ways within WSAs is limited to those routes/ways that were identified in the original FLPMA 603 wilderness review. Route inventories beyond those routes/ways is outside the scope of this RMP effort. As specified in the Draft RMP/EIS, addressing RS 2477 assertions is beyond the scope of this planning effort. However, nothing extinguishes any ROWs or alters in any way the legal rights the state and counties have to assert and protect RS 2477 rights. Data errors were noted on the maps within the DRMP/DEIS. Those errors have been corrected to reflect only inventoried ways within the WSAs.

Comment: *Garfield County submitted a detailed transportation plan identifying road repair, road rehabilitation, road construction, and maintenance standards appropriate to specific areas as identified in the BLM Land Use Planning Handbook. The draft RMP makes no reference to those proposals, and it appears that the BLM has failed to consider them.*

Response: Garfield County has been an active participant in developing the transportation plan and has provided information that was incorporated in the DRMP/EIS.

Comment: *Certain land tenure adjustments and Recreation & Public Purpose projects may transfer jurisdiction of the of existing federal lands to state or local authority. Garfield County opposes retention of riparian areas in federal control, when transfer to another level of government would provide greater public benefit.*

Response: Current federal laws and regulations govern the management and protection of riparian areas. Issues concerning site-specific riparian areas are addressed on a case-by-case basis.

Comment: *Garfield County has a detailed Protection of Cultural Resources Ordinance. Garfield County calls upon the BLM to be consistent to the maximum extent allowed by law with Garfield County's cultural resource ordinance.*

Response: BLM is aware that there are specific county and state plan decisions relevant to aspects of public land management that are discrete from, and independent of, federal law. However, BLM is bound by federal law. FLPMA requires that the development of resource management planning for public land must be coordinated with and consistent with county plans to the extent the Secretary finds practical by law, and resolve to the extent practicable, inconsistencies between federal and non-Federal Government plans (FLPMA, Title II Sec. 202 (c) (9)). As a consequence, where state and local plans conflict with federal law there will be an inconsistency that cannot be resolved or reconciled. Thus, while county and federal planning processes, under FLPMA, are required to be as integrated and consistent as practicable, the federal agency planning process is not bound by or subject to county plans, planning processes, or planning stipulations. BLM will identify these conflicts in the Proposed RMP/Final EIS so that the state and local governments have a complete understanding of the impacts of the Proposed RMP on state and local management options. A consistency review of the Proposed RMP with the state and county master plans has been included in Chapter 5.

Comment: *Garfield County's General Management Plan calls upon the BLM and other federal agencies to assist Garfield County in developing a local academic curational research facility to protect cultural*

and Paleontological resources. Targeting Paleontological resources for excavation and curation by outside facilities is inconsistent with Garfield County's no net loss of Paleontological resources policy.

Response: BLM paleontological resource management policy is to identify, evaluate, and, where appropriate, protect scientifically significant paleontological resources, ensuring that proposed land uses, initiated or authorized by BLM, do not inadvertently damage or destroy these resources (BLM Manual 8270, *Paleontological Resource Management*). BLM policy also requires the facilitation of appropriate scientific, educational, and recreational uses of paleontological resources, such as research and interpretation.

Comment: *See General Comments associated with visual resource management. In as much as visual resource management is largely a discretionary function, that designation of management classes and visual resource inventories are tempered with considerations for other land uses and that visual management classes may differ from inventory classes based on management priorities for land uses, Garfield County calls upon the BLM to strictly conform to Garfield County's visual resource management classes. Failure to conform to the County's VRM designation is inconsistent with the County plan to the maximum extent allowed by law.*

Response: BLM is required by FLPMA to manage for scenic resources. BLM meets this responsibility through the VRM program. Guidance regarding the VRI is included in BLM Handbook H-8410 and VRM in BLM Handbook H-8431. The BLM is aware that there are specific county and state plan decisions relevant to aspects of public land management that are discrete from, and independent of, federal law. However, the BLM is bound by federal law. The FLPMA requires that the development of an RMP for public lands must be coordinated and consistent with county plans, to the maximum extent possible by law, and inconsistencies between federal and non-Federal Government plans be resolved to the extent practical (FLPMA, Title II Sec. 202 (c)(9)). As a consequence, where state and local plans conflict with federal law, there will be an inconsistency that cannot be resolved or reconciled. Thus, while county and federal planning processes, under FLPMA, are required to be as integrated and consistent as practical, the federal agency planning process is not bound by or subject to county plans, planning processes, or planning stipulations. The BLM will identify these conflicts in the Proposed RMP/Final EIS, so that the state and local governments have a complete understanding of the impacts of the Proposed RMP on state and local management options.

Comment: *BLM has failed to analyze the cumulative effects of managing all WSAs as VRM Class I Alternatives considered in other RMPs being conducted throughout the state constitute a reasonably foreseeable action. Failure to consider the cumulative effects of all reasonably foreseeable actions violates NEPA.*

Response: The Draft RMP/EIS addresses the cumulative effects of managing WSAs as VRM Class I within the RFO and adjacent public lands as described in Section 4.7.4.1.6 in this document. The cumulative effects boundary includes the RFO and adjacent public lands and not the entire state.

Comment: *See Garfield County's General Comments associated with visual resource management. BLM failed to analyze a full range of alternatives considering visual resource management. The BLM failed to analyze a Class IV status for many non-WSA lands in Garfield County; the BLM failed to analyze the impacts of non-federal lands on VRM designations; and the BLM failed to include alternatives consistent with Garfield County's General Management Plan. The BLM also failed to analyze impacts associated with managing non-recommended WSA lands for Class I status.*

Response: The Draft RMP/EIS included a reasonable range of alternatives that considered various VRM alternatives. Alternative A of the Draft RMP/EIS analyzed a VRM Class IV for much of the non-WSA lands in Garfield County. The “Cumulative Impacts” section, 4.7.4.1.6 in this document, analyzes the

impacts to visual resources from past, present, and reasonably foreseeable future actions on non-federal lands.

Comment: *Application of the wilderness standard for roads traversing non-WSA lands is inconsistent with Garfield County's General Management Plan and applies wilderness standards without proper authority.*

Response: The BLM RFO is aware that the counties have updated their general management plans in 2007. The revised general management plan was provided to BLM late in the planning process and may need to be reviewed further in development of the Proposed RMP/Final EIS. BLM is aware that there are specific county and state plan decisions relevant to aspects of public land management that are discrete from, and independent of, federal law. However, BLM is bound by federal law. The FLPMA requires that the development of an RMP for public lands must be coordinated and consistent with county plans, to the maximum extent possible by law, and inconsistencies between federal and non-Federal Government plans be resolved to the extent practical (FLPMA, Title II Sec. 202 (c)(9)). As a consequence, where state and local plans conflict with federal law there will be an inconsistency that cannot be resolved or reconciled. Thus, while county and federal planning processes, under FLPMA, are required to be as integrated and consistent as practical, the federal agency planning process is not bound by or subject to county plans, planning processes, or planning stipulations. BLM will identify these conflicts in the Proposed RMP/Final EIS, so that the state and local governments have a complete understanding of the impacts of the Proposed RMP on state and local management options. A consistency review of the Proposed RMP with the state and county master plans is included in Chapter 5.

BLM's authority for managing lands to protect or enhance wilderness characteristics comes directly from FLPMA Section 202 (43 U.S.C. §1712). This section of BLM's organic statute gives the Secretary of the Interior authority to manage public lands for multiple use and sustained yield. Nothing in this section constrains the Secretary's authority to manage lands as necessary to "achieve integrated consideration of physical, biological, economic, and other sciences." FLPMA, Section 202(c)(2) (43 U.S.C. §1712(c)(2)). Further, FLPMA makes it clear that the term "multiple use" means that not every use is appropriate for every acre of public land and that the Secretary can "make the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use…" FLPMA, Section 103(c) (43 U.S.C. §1702(c)). FLPMA intended for the Secretary of the Interior to use land use planning as a mechanism for allocating resource use, including wilderness character management, among the various resources in a way that provides uses for current and future generations. BLM has long acknowledged that FLPMA Section 603 (43 U.S.C. §1782) requiring a one-time wilderness review has expired. All current inventory of public lands is authorized by FLPMA Section 201 (43 U.S.C. §1711). In September 2006, the Utah District Court affirmed that the BLM retained authority to protect lands it determined to have wilderness characteristics in a manner substantially similar to the manner in which such lands are protected when protected as WSAs. Finally, the Utah v. Norton Settlement Agreement does not affect BLM's authority to manage public lands. This agreement merely remedied confusion by distinguishing between WSAs established under FLPMA § 603 and required to be managed under § 603's non-impairment standard, and other lands that fall within the discretionary FLMPA § 202 land management process. See also IM 2003-275.

Comment: *The BLM has asserted a disputed jurisdictional claim over a very small number of roads in Garfield County, and the BLM has made no attempt to identify the roads to which this criteria applies. Failing to identify roads to which the criteria applies, prohibits the BLM from accurately analyzing impacts.*

Response: As specified in the Draft RMP/EIS, page 1-10, addressing RS 2477 assertions is beyond the scope of this planning effort. However, nothing extinguishes any ROW or alters in any way the legal rights the state and counties have to assert and protect RS 2477 rights.

Comment: *It should also be noted that the vast majority of roads managed, owned and/or maintained by Garfield County fall outside of the criteria. The roads are classified as High Standard Dirt roads, Low Standard Gravel roads and Low Standard Paved roads. If BLM intends to classify roads by maintenance level and surface types, it needs to allow highway management entities the opportunity to evaluate classification standards and applications.*

Response: The document has been changed to remove the decision under VRM that identifies VRM Class IV setbacks for roads.

Comment: *Garfield County does not believe the Sahara Sands area meets criteria established in Garfield County's General Management Plan associated with SRMA development.*

Response: The Draft RMP/EIS Section 3.4.3.1, regarding RMAs, addresses the criteria that were used to identify the SRMAs. These criteria are based on BLM policies and regulations (43 CFR 8342.1). SRMAs were based on these criteria. Sahara Sands was analyzed for SRMA identification in Alternative A in conjunction with an open OHV area. The Sahara Sands area is not identified as an SRMA in the Proposed RMP.

Comment: *Garfield County recognizes the need to control large groups and individuals. However, the limits placed in this alternative-are such that large families, use groups, classes, and Scout troops would be required to have special use permits. Garfield County is willing to consider such permits. However, at this point, the complexity of the permits and the difficulty in obtaining the permits has not been determined. Therefore, Garfield County opposes as alternative.*

Response: 43 CFR 2932 authorizes Special Recreation Permits (SRPs) for organized group activities and event. The RMP establishes thresholds by which organized groups would need to file an application to obtain an SRP for their proposed activities. The proposed activities would then be reviewed to determine if an SRP would be required or if the activities would constitute casual use. Resource impacts and conflicts have occurred from large groups such as those listed within the comment.

Comment: *A detailed inventory needs to be completed identifying all routes. Cooperative efforts need to be it initiated to evaluate motorized use in WSAs on a case-by-case basis, all subject to valid existing rights.*

Response: Designation of WSAs and additions to current vehicle route inventories in WSAs is beyond the scope of this plan. Valid, existing rights are recognized in WSAs.

Comment: *BLM should also take note that more than 1,000 mining claims have been filed in Garfield County in recent weeks. The BLM must incorporate appropriate management actions in the RMP to address these mining claims.*

Response: The BLM does not have discretion as to entry and location of mining claims on open, unappropriated, public lands and does not have the discretion to determine mitigations for mining claims at the time of location. However, the BLM does have discretion to make public lands open to entry or to close lands (e.g., withdraw certain public lands from the operations of the mining laws). The BLM also has authority through FLPMA, the federal regulations in 43 CFR 3809, and other federal laws and regulations as applicable to regulate mining-related operations and the surface disturbances that would be incident to those operations. The BLM regulates mining-related operations on public lands to prevent unnecessary or undue degradation and to ensure the operation is reasonably incident to mining.

Comment: *In as much as Garfield County has developed a detailed transportation management plan, and the BLM has failed to perform similar planning functions during the RMP process, Garfield County calls upon the BLM to be consistent with Garfield County's Transportation Plan and OHV Ordinance.*

Response: The BLM RFO is aware that the counties have updated their general management plans in 2007. The revised general management plan was provided to BLM late in the planning process and may need to be reviewed further in development of the Proposed RMP/Final EIS. The BLM is aware that there are specific county and state plan decisions relevant to aspects of public land management that are discrete from, and independent of, federal law. However, the BLM is bound by federal law. The FLPMA requires that the development of an RMP for public lands must be coordinated and consistent with county plans, to the maximum extent possible by law, and inconsistencies between federal and non-Federal Government plans be resolve to the extent practical (FLPMA, Title II Sec. 202 (c)(9)). As a consequence, where state and local plans conflict with federal law, there will be an inconsistency that cannot be resolved or reconciled. Thus, while county and federal planning processes, under FLPMA, are required to be as integrated and consistent as practical, the federal agency planning process is not bound by or subject to county plans, planning processes, or planning stipulations. The BLM will identify these conflicts in the Proposed RMP/Final EIS, so that the state and local governments have a complete understanding of the impacts of the Proposed RMP on state and local management options. A consistency review of the Proposed RMP with the state and county master plans is included in Chapter 5.

Comment: *If BLM does have a detailed analysis has misled cooperating agencies and the public by indicating and non-WSA lands with wilderness characteristics are described in Utah Wilderness Inventory, 1999. Garfield County calls upon the BLM to remove any analysis, which is not based on detailed inventories.*

Response: As part of its wilderness characteristics inventory maintenance, BLM used a combination of field checks, Interdisciplinary Team review of data such as range files, county and BLM GIS data, and review of high- resolution aerial photographs. The BLM's findings are described in the 1999–2003 wilderness reinventory documentation as well as the wilderness characteristics review process (findings from this review are available on the RFO planning website, and in the administrative record). The BLM is satisfied that it has used a high-standard approach to public land inventory and it stands by its findings, particularly those findings involving wilderness characteristics inventory maintenance.

Comment: *It should be noted that during the working phase of the RMP numerous routes for identified by BLM and cooperating agencies that have not been included on the route inventory. Some of these routes were missed in previous inventories, and some of the routes constitute a complicated transportation network could not be accurately mapped. Garfield County calls upon the BLM to continue working with cooperating agencies in completing the inventory process and documenting all existing roads, paths, ways and trails in the field office. Garfield County also calls upon the BLM to be consistent with Garfield County's OHV Ordinance.*

Response: As described in the Draft RMP/EIS, the BLM used a variety of methods to inventory existing routes/ways within the RFO for consideration in the planning process, including Global Positioning System data (when available), data provided by the counties, map and orthophoto data, and staff/cooperator knowledge. Based on this inventory, the BLM identified 4,380 miles of routes/ways (Map 3-10 of the Draft RMP/EIS) within the RFO. It should be noted that route designations are implementation decisions and that the resulting transportation network could change over time. In the PROPOSED RMP/FINAL EIS, Appendix 9 has been included which addresses the process for future additions of designated routes to the transportation network. Management direction for OHVs is provided in 43 CFR 8340, BLM Manual 8340, and the BLM National OHV Management Strategy. Nothing in this RMP extinguishes any valid ROW, or alters in any way the legal rights the State of Utah and Garfield, Piute, Sanpete, Sevier, and Wayne counties have to assert and protect RS 2477 rights, and to challenge in federal court or other appropriate venue any use restrictions imposed by the RMP that they believe are inconsistent with their rights.

Emery County

Comment: *The practice of "cherry stemming" routes, roads and trails has always been a practice which stretches credibility, but the use of this vague and arbitrary tool has been taken to new heights in this WC inventory. Emery County doesn't recognize the validity of cherry-stemming features that are on the ground.*

Response: "Cherry stemming" is a land management technique that facilitates better land management by allowing ingress and egress without compromising a special designation. This technique was often applied to WSAs and carried subsequently into the 1996–99 wilderness inventory. However, the RFO Proposed RMP/Final EIS proposed alternative generally excluded the practice of cherry stemming in managing for non-WSA lands with wilderness characteristics.

Comment: *We suggest setting back the boundary of a proposed WC from these features to a reasonable distance of between one and one half mile.*

Response: Inventories conducted post-2004 applied current policy, which is based on IM 275-2003, Change 1. The suggestion of setting back the boundary of a proposed non-WSA with wilderness characteristics area does not follow this policy.

Comment: *Where the wilderness proponents "suggest" that there is a "reasonable probability" that an area "may have" wilderness character, our documentation simply shows evidence that people have been actively altering the land surface in a number of ways for over a century, and that the proper and reasonable decision will be to not manage most of these areas to preserve wilderness characteristics.*

Response: BLM followed the criteria outlined in the Wilderness Act and IM 2003-274 and IM 2003-275 to define whether an area has wilderness characteristics. On-the-ground inventories were conducted to verify these areas. BLM stands by its inventory.

Comment: *Flat Tops A well site and active mining claims in the southeastern portion of the area eliminate a large portion from legitimate wilderness characteristic management. The Flat Tops ACEC currently provides for special management of part of this area. Creating another layer of management is redundant since the ACEC prescriptions effectively manage for wilderness characteristics. Active gas and oil leases within this area indicate that PFO has made management decisions for this area, and they are not conducive to protection of wilderness characteristics. PFO has permitted Emery County a free use permit for clay on the northeastern boundary of this area.*

Response: The Flat Tops ACEC falls within the boundary of the Price Field Office and is outside the scope of the Richfield RMP.

Comment: *Labyrinth Canyon The extreme northern end of the proposed areas is bisected by a motorized route. More than half the route is a designated route in the 2003 travel plan. At the end of the route there is a prominent dugway as well as excavation sites (probably test holds for gravel). This site should be considered for future source of gravel. A cattle trail has been constructed down the face of the cliff, allowing access to the river. Some fencing has been placed around the top of the trail. Point #362. A designated route runs east-west from Road #1010 to near the mouth of Three Canyon. This route again bisects the area. An extension of the route continues north, but is not included in the 2003 plan. Two motorized routes run north-south on the east side of Three Canyon but were not designated in the 2003 plan. They converge and provide access to Junes Bottom, the location of an historic homestead/moonshine location. Stone dwellings and remnants of a steam powered tractor are still at the location. A dugway has been constructed down the Slickrock face near the location, at the terminus of the route, 372,373. Active gas and oil leases within this area indicate that PFO has made management decisions for this area, and they are not conducive to protection of wilderness characteristics. County*

Road #1026 bisects another segment of this proposed area. A complex of roads, including a BLM system road and an historic air strip slice up "The Spur" portion of this proposed area. The roads, especially the BLM road, are highly visible for miles. A high use road on the east side of the Green River is visible from much of eastern edge of "The Spur." This road accesses the boat ramp at Mineral Bottom as well as an active airstrip in the vicinity.

Response: In the Proposed RMP/Final EIS, the BLM chose to manage 2,800 acres (within Wayne County) of the 12,300 acres identified in the Draft RMP/EIS for the Labyrinth Canyon area. As part of BLM's wilderness characteristics inventory maintenance, BLM performed a combination of data and onsite reviews. This included specific field inspections, Interdisciplinary Team review of data such as range files, county and BLM GIS data, and high-resolution 2006 aerial photographs. The BLM's findings are described in the 1999–2003 wilderness reinventory documentation, as well as the 2007 wilderness characteristics review process (findings from this review are available on the RFO planning website, and in the administrative record). The BLM is satisfied that it has used a high-standard approach to public land inventory and it stands by its findings, particularly those findings that involved wilderness characteristics inventory maintenance.

Comment: *PFO should coordinate with the Richfield Field Office to develop consistent management. The Emery County/ Wayne County boundary should not be used for a management boundary.*

Response: The RFO has coordinated with the neighboring field offices on developing consistent management across field office boundaries. The BLM field office boundaries are set by the Utah State office in cooperation with the Washington office. Therefore setting the boundaries would be beyond the scope of this RMP.

Comment: *Section 11. Managing part or all of the Flat Tops Region for so-called wilderness characteristics would violate FLPMA, contradict the state's public land policy and contradict the foregoing plans of Emery County for managing the Flat Tops Region.*

Response: The BLM's authority for managing lands to protect or enhance wilderness characteristics comes directly from FLPMA Section 202 (43 U.S.C. §1712). This section of BLM's organic statute gives the Secretary of the Interior authority to manage public lands for multiple use and sustained yield. Nothing in this section constrains the Secretary's authority to manage lands as necessary to "achieve integrated consideration of physical, biological, economic, and other sciences." (FLPMA, Section 202(c)(2) [43 U.S.C. §1712(c)(2)]) Further, FLPMA makes it clear that the term "multiple use" means that not every use is appropriate for every acre of public land and that the Secretary can "make the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use…" (FLPMA, Section 103(c) [43 U.S.C. §1702(c)]) The FLPMA intended for the Secretary of the Interior to use land use planning as a mechanism for allocating resource use, including wilderness character management, among the various resources in a way that provides uses for current and future generations.

In addition, the BLM's *Land Use Planning Handbook* (H-1601-1) directs BLM to "identify decisions to protect or preserve wilderness characteristics (naturalness, outstanding opportunities for solitude, and outstanding opportunities for primitive and unconfined recreation) including goals and objectives to protect the resource and management actions necessary to achieve these goals and objectives. For authorized activities, include conditions of use that would avoid or minimize impacts to wilderness characteristics."

Comment: *Muddy Creek—Crack Canyon. This area is massive and appears to be a "fill-in-the-blank spaces with wilderness" exercise. There doesn't appear to have been an effort to inventory resources within these areas at all, just an attempt to fill in the gaps between WSAs. T23, 24 S, R&E and vicinity: There is interest in the Gypsum resources in this area, hence the mining claims. A motorized route*

between Kimball Draw and Hebe's Arch bisects the northern most segment of this area. Remnants of extensive mining activity is clustered at the Lucky Strike mine. BLM system roads, designated trails and other motorized routes significantly chop up the Baptiste Draw, Horse Valley, Bell Canyon area. The Behind-the-Reef OHV trail and Chute Canyon Road (County Road #1016) borders the southern part of this area. This route, along with the other designated routes attached to it accommodates major motorized recreation. BLM recently developed two camping areas near Temple Mountain specifically to accommodate this use. Active mining claims are present in the Hidden Splendor, Little Susan areas. Again, the historic remnants of mining activity is abundant and visible in these areas, as well as along the historic routes which uranium exploration created. Roads were also dozed into the Segar's Hole area for exploration purposes and remain visually noticeable. The vicinity of Oil Well Dome is pockmarked with gas wells and is a known reservoir for gas. Active gas and oil leases within this area indicate that PFO has made management decisions for this area which are not consistent with management for wilderness characteristics. A motorized route bisects the Wild Horse Mesa area. The Mesa east and west of County Road #1013 in Little Wild Horse Creek has been crisscrossed with many exploration routes. A BLM system road near the head of Chimney Canyon is routinely used to access a Bighorn Sheep trap staging area. Emery County has performed road maintenance there to accommodate the helicopter support crew for the trapping procedure. Finally, with respect to the Penitentiary Canyon vicinity of this WC area, bounded by County Road #1012, #1019 and the Muddy Creek WSA, Emery County believes it possesses characteristics of naturalness which may at times provide opportunities for solitude and/or a primitive type of recreation. However, Emery County insists that management prescriptions respect and uphold the other values and preferred management standards identified for this area in the above-referenced addendum to Emery County's general plan, including but not limited to the following: - PFO should complete a thorough inventory of the area to document and preserve relevant assets within the area such as fence lines, water resources, etc. - PFO should provide for reasonable access to SITLA properties, and reasonable ingress and egress for other holders of valid and existing rights. - PFO should develop management prescriptions which will not affect current users or alter current use. - PFO should guard against the elimination of diminishment of structures, routes and developments that are recognizable and manageable on the ground."

Response: The BLM chose not to manage the Muddy Creek—Crack Canyon area for wilderness characteristics in the Proposed RMP/Final EIS due to the reasons listed by the commentor and through internal BLM review. As part of BLM's wilderness characteristics inventory maintenance, BLM performed a combination of data and onsite reviews. This included specific field inspections, Interdisciplinary Team review of data such as range files, county and BLM GIS data, and high-resolution 2006 aerial photographs. The BLM's findings are described in the 1999–2003 wilderness reinventory documentation, as well as the 2007 wilderness characteristics review process (findings from this review are available on the RFO planning website, and in the administrative record). The BLM is satisfied that it has used a high-standard approach to public land inventory and it stands by its findings, particularly those findings that involved wilderness characteristics inventory maintenance.

Comment: *Mussentuchit Badland This re-inventory area is not overwhelmed with routes or other evidence of human activity but there are certainly enough routes, ponds and other evidences to eliminate most of the area from management for wilderness characteristics. Two County Roads penetrate the interior of the area. Road #922 provides access to a clay mining operation. In fact a large part of the proposed area has active mine claims in place. There are several other routes which access ponds and grazing amenities such as fence lines and troughs. Emery County once held a free use permit at the intersection of County Road #925 and #920. This site is a rare source for sand and gravel materials in this area.*

Response: The BLM chose not to manage the Mussentuchit Badland area for wilderness characteristics in the Proposed RMP/Final EIS. As part of BLM's wilderness characteristics inventory maintenance, BLM performed a combination of data and onsite reviews. This included specific field inspections,

Interdisciplinary Team review of data such as range files, county and BLM GIS data, and high-resolution 2006 aerial photographs. The BLM's findings are described in the 1999–2003 wilderness reinventory documentation, as well as the 2007 wilderness characteristics review process (findings from this review are available on the RFO planning website, and in the administrative record). The BLM is satisfied that it has used a high-standard approach to public land inventory and it stands by its findings, particularly those findings that involved wilderness characteristics inventory maintenance.

Comment: *SWEETWATER REEF. A large portion of this unit is designated "open" by the 2003 Route Designation Plan. Although the "open" designation allows for cross country travel, users have transitioned well to a "designated trail" mentality. Although there is some off-trail use, it seems to be manageable at this time. Closure of routes currently in use could well result in unmanageable non-compliance. Many of the motorized trails and roads within this area follow decades old seismic exploration lines. Although wilderness proponents will claim that these lines are being naturally reclaimed, and becoming substantially unnoticeable, we believe they are better described as faint, but definitely noticeable. Grazing is currently the dominant use of the area. The many range projects include fence lines, stock ponds and developed springs and well. The wells typically require motorized pumping systems, troughs and storage tanks. These wells are visually and audibly noticeable from a couple of miles away. The statement that PFO makes that these isolated developments do not affect naturalness is false. The supplemental values mentioned should not be included as criteria supporting management for wilderness characteristics, especially historic structures and early petroleum exploration which are evidence of activity diametrically opposed to wilderness characteristics. Active gas and oil leases within this area indicate that PFO has made management decisions for this area which are not consistent with management for wilderness characteristics. Free use permits issued by the PFO within or adjacent to this area includes Spire Point, Dugout Springs and Saucer Basin.*

Response: The BLM chose not to manage the Sweetwater Reef area for wilderness characteristics in the Proposed RMP/Final EIS due to the reasons listed by the commentor and through internal BLM review. As part of BLM's wilderness characteristics inventory maintenance, BLM performed a combination of data and onsite reviews. This included specific field inspections, Interdisciplinary Team review of data such as range files, county and BLM GIS data, and high-resolution 2006 aerial photographs. The BLM's findings are described in the 1999–2003 wilderness reinventory documentation, as well as the 2007 wilderness characteristics review process (findings from this review are available on the RFO planning website, and in the administrative record). The BLM is satisfied that it has used a high-standard approach to public lands inventory and it stands by its findings, particularly the findings that involved wilderness characteristics inventory maintenance.

Comment: *WILD HORSE MESA Wild Horse Mesa reinventory area is bisected by a road which follows Wild Horse Creek. The road begins at Emery County Road #1013 and terminated on East Wild Horse Mesa in Wayne County. SR-24 is the eastern boundary to this area. This is a two lane highway which serves as a major north-south route and a major access to Lake Powell. Emery County Road #1012 is a northeastern boundary which is currently being realigned, widened and paved. 1012 is the major access route to Goblin Valley State Park, Temple Mountain Area, Bell and Little Wild Horse Canyon Trails and other recreation areas on the San Rafael Swell. These areas adjoining the Wild Horse Mesa area have required several road upgrades to handle the increasing visitation. Emery County has a permitted free use permit in the Little Wild Horse Wash. This is a very important material source and will be needed for future road projects. A number of springs have been filed on with the state for water rights. Livestock grazing is a major resource of the area. Several fence lines are found within the bounds of this area. Finally, with respect to the interior portion of this area, Emery County believes it possesses characteristics of naturalness which may at times provide opportunities for solitude and/or a primitive type of recreation. However, Emery County insists that management prescriptions respect and uphold the other values and preferred management standards identified for this area in the above-referenced*

addendum to Emery County's general plan, including but not limited to the following: - PFO should complete a thorough inventory of the area to document and preserve relevant assets within the area such as fence lines, water resources, etc. - PFO should provide for reasonable access to SITLA properties, and reasonable ingress and egress for other holders of valid and existing rights. - PFO should develop management prescriptions which will not affect current users or alter current use. - PFO should guard against the elimination or diminishment of structures, routes and developments that are recognizable and manageable on the ground. -PFO should coordinate with the Richfield Field Office to develop consistent management. The Emery County/ Wayne County boundary should not be used for a management boundary.

Response: In the Proposed RMP/Final EIS, the BLM chose to manage 8,700 acres of the 49,700 acres identified in the Draft RMP/EIS for the Wild Horse Mesa area. As part of BLM's wilderness characteristics inventory maintenance, BLM performed a combination of data and onsite reviews. This included specific field inspections, Interdisciplinary Team review of data such as range files, county and BLM GIS data, and high-resolution 2006 aerial photographs. The BLM's findings are described in the 1999–2003 wilderness reinventory documentation, as well as the 2007 wilderness characteristics review process (findings from this review are available on the RFO planning website, and in the administrative record). The BLM is satisfied that it has used a high-standard approach to public land inventory and it stands by its findings, particularly the findings that involved wilderness characteristics inventory maintenance.

Comment: *Rock Canyon Several routes penetrate this area from the west, mostly for the purpose of accessing livestock associated features, including ponds and troughs. The area is immediately adjacent to the four lane interstate freeway on the north. The Mancos badlands near 1-70 and County Road #912 are heavily used for motorized recreation. Active mining claims are present in the north, west and south portions of the area.*

Response: The BLM chose not to manage the Rock Canyon area for wilderness characteristics in the Proposed RMP/Final EIS due to the reasons listed by the commentor and through internal BLM review. As part of BLM's wilderness characteristics inventory maintenance, BLM performed a combination of data and onsite reviews. This included specific field inspections, Interdisciplinary Team review of data such as range files, county and BLM GIS data, and high-resolution 2006 aerial photographs. The BLM's findings are described in the 1999–2003 wilderness reinventory documentation, as well as the 2007 wilderness characteristics review process (findings from this review are available on the RFO planning website, and in the administrative record). The BLM is satisfied that it has used a high-standard approach to public land inventory and it stands by its findings, particularly the findings that involved wilderness characteristics inventory maintenance.

Sevier County

Comment: *We respectfully expect the BLM to "consider" Sevier County's Land Use Plan and ordinance, in implementing your "multiple use" mandate from congress on the majority of the land in the Richfield Field Office while managing resources and finally assure the "RMP is consistent with Sevier Counties Land Use Plan.*

Response: The BLM considered the county's land use plan and ordinance in the crafting of the Proposed RMP**.** The BLM RFO is aware that the counties have updated their general management plans in 2007. The revised general management plan was provided to BLM late in the planning process and was reviewed further in development of the Proposed RMP/Final EIS. The BLM is aware that there are specific county and state plan decisions relevant to aspects of public land management that are discrete from, and independent of, federal law. Chapter 5 of this document includes a consistency review with the Sevier County Plan.

Comment: *Because of the nature of this collaborative process, and its importance to the future of Sevier County, we ask the BLM to review the County General Plan as amended in this planning process before a final RMP is adopted.*

Response: The BLM RFO is aware that the counties have updated their general management plans in 2007. The revised general management plan was provided to BLM late in the planning process and may need to be reviewed further in development of the Proposed RMP/Final EIS. The BLM is aware that there are specific county and state plan decisions relevant to aspects of public land management that are discrete from, and independent of, federal law. However, the BLM is bound by federal law. The FLPMA requires that the development of an RMP for public lands must be coordinated and consistent with county plans, to the maximum extent possible by law, and inconsistencies between federal and non-Federal Government plans be resolved to the extent practical (FLPMA, Title II Sec. 202 (c)(9)). As a consequence, where state and local plans conflict with federal law, there will be an inconsistency that cannot be resolved or reconciled. Thus, while county and federal planning processes, under FLPMA, are required to be as integrated and consistent as practical, the federal agency planning process is not bound by or subject to county plans, planning processes, or planning stipulations. The BLM will identify these conflicts in the Proposed RMP/Final EIS, so that the state and local governments have a complete understanding of the impacts of the Proposed RMP on state and local management options. A consistency review of the Proposed RMP with the state and county master plans is included in Chapter 5.

Comment: *Sevier County has spent thousands of hours and tens of thousands of dollars compiling geographical data, including photographs and other evidence of proof which proves these areas do not meet wilderness characteristics. This document is entitled "Sevier County, Utah-Proposed Wilderness Characteristics Lands" and is attached. This data is Sevier County's position concerning Wilderness Inventoried Areas (WIA). See attachment A.*

Response: The BLM considered the county's inventory in developing the Proposed RMP, and based upon all available information BLM carried forward 78,600 acres (12 percent) of the 682,600 acres of non-WSA lands with wilderness characteristics identified in the Draft RMP Alternative D. The presence or absence of man-made intrusions does not mean that an area does not possess wilderness characteristics. It is the cumulative significance of these features that determines whether an area possesses wilderness characteristics. As part of its wilderness characteristics inventory maintenance, BLM used a combination of field checks, Interdisciplinary Team review of such data as range files, county and BLM GIS data, and review of high resolution 2006 aerial photographs. BLM stands by its determination. BLM has reviewed the information submitted and determined that the information is not new and significant.

Comment: *Sevier County has been very involved in the discussion about the Factory Butte area and we are submitting a document that proposes what we believe is a reasonable and workable solution for consideration for the final RMP. We have spent numerous hours on the ground with a large group of stake holders including representatives of U.S. Fish and Wildlife and believe that this compromise position is an excellent way to protect the resource and still allow meaningful access. This attachment is included as Attachment B.*

Response: BLM has considered the proposals submitted by several commenters. The commenters' proposal is included within the range of alternatives considered within the Draft RMP/EIS. The Proposed RMP/Final EIS has been revised to address the proposal and the commenters' concerns. Several surveys and clearances will be required to identify the location of specific trails. The exact location of any trails will be clearly marked. The general location of trails, kiosks, fences, and other facilities is identified in the Proposed RMP/Final EIS. The location of these facilities will be specified in activity-level planning. The area will be strictly monitored to include compliance with the plan. Following BLM policy, the RFO will take a cooperative management approach to implement the plan.

Comment: *The socioeconomic section of Chapter 4 was very incomplete with several concerns unaddressed. As a result, the Six County Association of Governments contracted with Utah State University (USU) to conduct a review of the Chapter 4 for the Six County area, which includes Sevier County.*

Response: BLM has reviewed the USU, October 2006, Review of the Socioeconomic Analysis in the Draft EIS prepared by the USDI—BLM RFO (also known as the AOG study). It expressed concerns with analyses of livestock grazing, oil and gas production, socioeconomic groups (or "neighborhoods"), and OHV use in the counties.

The AOG study was a critique of the original Draft EIS; the current, public Draft EIS has been modified considerably and has taken into account, directly or indirectly, many of the concerns expressed in the original AOG critique.

Based on CEQ Sec. 1502.2 BLM's policies and guidelines require the BLM to analyze the impacts of significant differences from the current situation (i.e., the Alternative N: No Action). Given that the percent change in AUMs across alternatives is only 0.7 percent, there is no need to do the depth of livestock grazing analysis suggested by the AOG. Furthermore, the Proposed RMP shows no significant difference from the current situation, and therefore no impact from BLM decisions reached in the plan.

The BLM acknowledges the planning area contains distinct socioeconomic "neighborhoods" that likely have differential ties to the BLM lands, and would likely experience differential impacts from BLM management changes. A land use plan is a landscape-level plan addressing BLM actions on the entire planning area. This focus is not intended to deny that real differences exist among the various communities and groups within the planning area. The plan takes a broader view. The BLM is unaware of any data suggesting that a "neighborhood" level analysis would have affected the decisions reached in the plan.

In developing land use plans, the BLM is mandated by FLPMA to observe the principles of multiple use and sustained yield. FLPMA defines multiple use as "the management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people…the use of some land for less than all of the resources, a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources….with consideration given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output."

The BLM used the scoping process to explore and objectively determine a reasonable range of alternatives that best addressed the issues, concerns, and alternatives identified by the public. As a result, five alternatives were identified (including the No Action Alternative) for further analysis. Each alternative considers various levels or degree of resource use or resource protection to give the public the ability to fully compare the consequences of each management prescription or action.

Alternative A favors mineral development over protection of resources. Alternative C of the Draft RMP/EIS favors the protection of resources over the extraction of mineral development. Alternative D is the same as Alternative C except it includes management of lands with wilderness characteristics to preserve those characteristics. Alternative B is designed to be a balance between mineral development and protection of resources. Table 2.1 in the Richfield Draft RMP/EIS provides in comparative form the management actions associated with each alternative.

Comment: *The County does not believe BLM has the authority to create a special management criteria based solely on wilderness characteristics. We believe that the authority governing the inventory and*

management of lands with wilderness characteristics was passed to BLM through section 603 of the Federal Land Policy and Management Act, and that section 603 has now expired. And, while BLM may have authority to inventory their lands for various purposes, they still require Congressional authorization to manage for wilderness.

Response: BLM's authority for managing lands to protect or enhance wilderness characteristics comes directly from FLPMA Section 202 (43 U.S.C. §1712). This section of BLM's organic statute gives the Secretary of the Interior authority to manage public lands for multiple use and sustained yield. Nothing in this section constrains the Secretary's authority to manage lands as necessary to "achieve integrated consideration of physical, biological, economic, and other sciences." FLPMA, Section 202(c)(2) (43 U.S.C. §1712(c)(2)). Further, FLPMA makes it clear that the term "multiple use" means that not every use is appropriate for every acre of public land and that the Secretary can "make the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use…" FLPMA, Section 103(c) (43 U.S.C. §1702(c)). FLPMA intended for the Secretary of the Interior to use land use planning as a mechanism for allocating resource use, including wilderness character management, among the various resources in a way that provides uses for current and future generations. BLM has long acknowledged that FLPMA Section 603 (43 U.S.C. §1782) requiring a one-time wilderness review has expired. All current inventory of public lands is authorized by FLPMA Section 201 (43 U.S.C. §1711). In September 2006, the Utah District Court affirmed that the BLM retained authority to protect lands it determined to have wilderness characteristics in a manner substantially similar to the manner in which such lands are protected when protected as WSAs. Finally, the Utah v. Norton Settlement Agreement does not affect BLM's authority to manage public lands. This agreement merely remedied confusion by distinguishing between WSAs established under FLPMA § 603 and required to be managed under § 603's non-impairment standard, and other lands that fall within the discretionary FLMPA § 202 land management process. See also IM 2003-275.

Comment: *The conclusion that we have made, based on this information, is that while there are some small areas that remain relatively undisturbed by man, the BLM has failed to demonstrate the necessary standard on size, naturalness, and outstanding nature. Further, in most areas, the BLM fails to demonstrate the necessary standard on isolation and opportunity for solitude.*

Response: The presence or absence of man-made intrusions does not mean that an area does not possess wilderness characteristics. It is the cumulative significance of these features that determines whether an area possesses wilderness characteristics. As part of its wilderness characteristics inventory maintenance, BLM used a combination of field checks, Interdisciplinary Team review of data such as range files, county and BLM GIS data, and review of high-resolution 2006 aerial photographs. BLM stands by its determination. BLM has reviewed the information submitted and determined that the information is not new and significant.

Comment: *The correct standard for rangeland health management is not whether BLM may permanently close an entire grazing allotment. The correct standard is whether BLM may diminish a single grazing AUM for any reason other than rangeland conditions. The "close an entire grazing allotment" standard misses the mark of House Bill 264 and local county plans by a serious margin.*

Response: The Draft RMP/EIS does not include any alternatives that consider decreases in livestock grazing; therefore, this comment does not apply to this document.

Comment: *However, BLM-imposed suspensions of use or other reductions in domestic livestock animal unit months should be temporary and scientifically based on rangeland conditions.*

Response: Per the 43 CFR 4100 regulations, suspended AUMs are restored to the operator to the amount of the suspension, if conditions allow. The regulations also address temporary increases or decreases to permitted use based on supporting monitoring, field observations, ecological site inventories, or other data

acceptable to the authorized officer (43 CFR 4110.3). Beyond this, AUMs are allocated to livestock or wildlife depending on the allotment objectives contained in the RMP and Rangeland Program Summary.

Comment: *Accordingly, animal unit months in the RFO planning area should not be relinquished or retired in favor of conservation, wildlife, or other uses.*

Response: Per IM-2006-098 (change 1), it is BLM policy to maintain livestock grazing on BLM lands in conformance with all governing laws and regulations. It would be inconsistent with these and other laws to eliminate livestock grazing on a field office basis. However, the land use planning process can close lands to grazing as provided for in the Taylor Grazing Act and FLPMA but only with a rational basis to resolve identified issues.

Comment: *The transfer of grazing animal unit months (AUMs) to wildlife for supposed reasons of rangeland health is illogical. There is already imputed in each AUM a reasonable amount of forage for wildlife component.*

Response: There is no decision in the Draft RMP/EIS that specifically transfers AUMs to wildlife for reasons of rangeland health.

Comment: *Any grazing animal unit months that may have been reduced in the RFO planning area due to rangeland health concerns should be restored to livestock when rangeland conditions improve not converted to wildlife use.*

Response: Per the 43 CFR 4100 regulation, suspended AUMs are restored to the operator to the amount of the suspension, if conditions allow. Beyond this, AUMs are allocated to livestock or wildlife depending on the allotment objectives contained in the RMP and Rangeland Program Summary.

Comment: *The RMP may not unilaterally amend a grazing permit without monitoring data or other information. 43 C.F.R. §4130.2-1 (changes in grazing use). Dictating changes in the seasons of use from the RMP also violates the requirement that BLM coordinate, consult and cooperate with individual permittees before amending an allotment management plan. 43 U.S.C. §1752(d); 43 C.F.R. §4110.3-2.*

Response: The Draft RMP/EIS does not change any seasons of use. It does present criteria by which changes to seasons of use would be considered. Changes in seasons of use are implementation actions. It is mandatory that the BLM involve the permittee in any changes that are made to the season of use. These changes are made only after proper NEPA documentation has been completed. The intent of the change and NEPA documentation is also listed on the BLM's NEPA Electronic Bulletin Board, which the public has access to.

Comment: *First, the maps provided at open houses and in the DRMP are not accurate or detailed enough to adequately evaluate the boundaries of remaining OHV open areas or to closely examine road closures.*

Response: BLM has provided detailed maps within the document. Maps of finer detail can be accessed at the RFO reading room. Maps were created to differentiate the designation of the route, not the route classification.

Comment: *We also note that the County has a travel map showing all our roads and trails, and the BLM's travel plan should be consistent with the County's information.*

Response: As described in the Draft RMP/EIS, the BLM used a variety of methods to inventory existing routes/ways within the RFO for consideration in the planning process, including Global Positioning System data (when available), data provided by the counties, map and orthophoto data, and staff/cooperator knowledge. Based on this inventory, the BLM identified 4,380 miles of routes/ways

(Map 3-10 of the Draft RMP/EIS) within the RFO. It should be noted that route designations are implementation decisions and that the resulting transportation network could change over time. Management direction for OHV is provided in 43 CFR 8340, BLM Manual 8340, and the BLM National OHV Management Strategy.

Comment: *Sevier County is not comfortable with the BLM's RFD, or the manner in which the BLM determines the potential future economic viability of certain minerals. It does not match county planning or the County's assessment of potential value.*

Response: The RFD predicts a reasonable development scenario for oil and gas activity. The commenter does not substantiate deficiencies in the analysis or RFD. The mineral potential report addressed the likelihood of mineral development. Chapter 3 of the Draft RMP/EIS updated the mineral potential report. The commenter does not substantiate deficiencies in the analysis. The coal resource reports identified areas with mineable resources. The unsuitability criteria were applied to determine areas suitable for consideration of coal leasing. The commenter does not substantiate deficiencies in the analysis.

Comment: *Valid and existing rights must be recognized for the continued economic viability of our County. We expect that any alternative should recognize these rights.*

Response: As required by regulations and policies, valid existing rights would be recognized by BLM.

Comment: *Valid and existing rights must be recognized and protected, water for culinary use, irrigation, recreation, and all other uses must be protected.*

Response: The Federal Government has delegated the authority to allocate water within state boundaries to state governments. This means that even though BLM is a federal agency, it must seek water rights from state governments to obtain and provide water for BLM uses. These uses include, but are not limited to, irrigation, wildlife water and habitat, livestock watering, recreation, fisheries, and riparian/wetlands.

Comment: *The County is concerned about the BLM's suitability findings given the level to which this water is appropriated, and given its historic and current use. Designation of any segments as wild and scenic would unnecessarily restrict the ability of the water users to carry on the daily management of their water. Wild and scenic designation almost always carries with it some form of water flow requirements, and any such influence on the use and management of the current water resource could be ruinous to the water users.*

Response: Barring congressional action, there is no effect on water rights or in-stream flows related to suitability findings made in a land use plan decision. Even if Congress were to designate rivers into the National Wild and Scenic Rivers System, any such designation would have no effect on existing water rights. Section 13(b) of the Wild and Scenic River Act states that jurisdiction over waters is determined by established principles of law. In Utah, the State has jurisdiction over water. Although the Wild and Scenic Rivers Act implies a Federal reserved water right for designated rivers, it does not require or specify any amount, and as noted above, confirms that Utah has jurisdiction over water rights. The BLM would be required to adjudicate the water right, in the same manner as any other entity, by application through State processes. Thus, for congressionally designated rivers, the BLM may assert a Federal reserved water right for appurtenant and unappropriated water with a priority date as of the date of designation (junior to all existing rights), but only in the minimum amount necessary to fulfill the primary purpose of the reservation.

Comment: *The county believes that the creation of any new ACECs should follow very specific standards as defined in federal law and should not be used as an alternative to, or interim management leading to, wilderness designation or managing for wilderness characteristics.*

Response: The BLM has separate policies and guidelines as well as criteria for establishing ACECs and WSAs. The differing criteria make it possible that the same acreages will quality as both an ACEC and a WSA but for different reasons. The BLM is required to consider these different policies. The values protected by the WSA do not necessarily protect those values found relevant and important for the ACEC process and vice versa.

Comment: *We believe that all alternatives considered should comply with all federal law, BLM policy, the State of Utah Law, and the interior settlement of 2003.*

Response: The BLM considered federal law, BLM policy, State of Utah law, and the interior settlement of 2003 in developing the alternatives. The BLM's authority for managing lands to protect or enhance wilderness characteristics comes directly from FLPMA Section 202 (43 U.S.C. §1712). This section of BLM's organic statute gives the Secretary of the Interior authority to manage public lands for multiple use and sustained yield. Nothing in this section constrains the Secretary's authority to manage lands as necessary to "achieve integrated consideration of physical, biological, economic, and other sciences." (FLPMA, Section 202(c)(2) [43 U.S.C. §1712(c)(2)]) Further, FLPMA makes it clear that the term "multiple use" means that not every use is appropriate for every acre of public land and that the Secretary can "make the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use…" (FLPMA, Section 103(c) [43 U.S.C. §1702(c)]) The FLPMA intended for the Secretary of the Interior to use land use planning as a mechanism for allocating resource use, including wilderness character management, among the various resources in a way that provides uses for current and future generations.

In addition, the BLM's *Land Use Planning Handbook* (H-1601-1) directs BLM to "identify decisions to protect or preserve wilderness characteristics (naturalness, outstanding opportunities for solitude, and outstanding opportunities for primitive and unconfined recreation, including goals and objectives to protect the resource and management actions necessary to achieve these goals and objectives. For authorized activities, include conditions of use that would avoid or minimize impacts to wilderness characteristics."

State of Utah

Comment: *The BLM is obligated to examine the state and local plans and policies concept by concept, criteria by criteria, and line by line, if necessary, to determine the extent to which the plans and policies of state and local governments represent a consistent statement of the shared stewardship of the land.*

Response: A consistency review of the Proposed RMP with the state and county master plans is included in Chapter 5.

Comment: *Because of the value of grazing, state policy discourages permanent closure of grazing allotments and encourages the reinstatement of suspended AUMs when range conditions permit somewhere within the Richfield FO.*

Response: Per the 43 CFR 4100 regulation, suspended AUMs are restored to the operator to the amount of the suspension if conditions allow. Beyond this, AUMs are allocated to livestock or wildlife depending on the allotment objectives contained in the RMP and Rangeland Program Summary.

Comment: *The state strongly suggests that BLM support flexibility within the management provisions for livestock grazing time (duration) and timing (season of use) in the Final Plan.*

Response: The BLM's grazing regulations (43 CFR 4100) require each grazing permit to have mandatory terms and conditions, including a specified season of use, kind of livestock, and other terms and

conditions as necessary. The Draft RMP/EIS has been modified to include an alternative that provides for using livestock grazing for site-specific fuels management outside the season of use.

Comment: *In addition, the state encourages the BLM to cooperate with the state grazing permittees and conservation organizations to actively monitor and record grazing use data, wildlife populations and range conditions. The Final RMP should contain and rely on a robust monitoring program so that resource managers and users can communicate, learn, assign responsibilities, and use adaptive management to meet land health objectives.*

Response: Monitoring is an ongoing effort in the grazing program. Monitoring is done on an allotment-specific basis, based on set monitoring procedures established for Bureau-wide consistency. There is already a program to invite permittees and other interested public to assist in monitoring and allotment management (43 CFR 4100). Requests from permit holders to cooperate with monitoring allotments with more issues "I Category Allotments" receive more monitoring than Custodial allotments. Monitoring is required prior to making any allotment changes. Current BLM policy and regulation support the continuation of the existing monitoring program.

Comment: *On a related note, the state believes the BLM should only employ the term "critical habitat" when referring to the legal habitat designations for endangered and threatened species under the Endangered Species Act. The state requests that the BLM use the "crucial habitat" designations mapped by the Division of Wildlife Resources solely as descriptive wildlife habitat designations, not as automatic exclusion zones for other multiple uses.*

Response: As noted in the comment, the term "designated critical habitat" should be used only in reference to species listed as threatened or endangered under the Endangered Species Act. Designated crucial habitat is a DWR designation and should consistent for all alternatives because BLM does not have authority to change them. The Final RMP/EIS has been changed to correct the issues discussed above.

Comment: *As an interim measure, the state encourages the Richfield FO to request that oil and gas operators apply best available control technology. We also encourage the Richfield FO to adopt emission standards for compressor engines consistent with the Four Corners Air Quality Task Force Report of Mitigation Options, DRAFT: Version 7, June 22,2007 (Task Force Report).*

Response: The air quality management actions in the Proposed RMP/Final EIS have been revised to include the following: "The BLM will work cooperatively to encourage industry to adopt measures to reduce potential emissions. Examples of these types of measures can be found in the Four Corners Air Quality Task Force Report of Mitigation Measures, such as a requirement of a 2g/bhp-hr limit on engines less than 300HP and 1g/bhp-hr limit on engines larger than 300HP."

Comment: *Pending completion of comprehensive air quality analyses and region-wide air quality modeling, we encourage the BLM to work with stakeholders to research additional interim measures, such as those presented by the Four Comers Air Quality Task Force, to determine which emission mitigation strategies should be required as future lease and application for permit to drill (APD) conditions.*

Response: The air quality management actions in the Proposed RMP/Final EIS have been revised to include the following: "The BLM will work cooperatively to encourage industry to adopt measures to reduce potential emissions. Examples of these types of measures can be found in the Four Corners Air Quality Task Force Report of Mitigation Measures, such as a requirement of a 2g/bhp-hr limit on engines less than 300HP and 1g/bhp-hr limit on engines larger than 300HP."

Comment: *The law indicates, among other things, that river segments proposed for inclusion in the NWSRS should contain water at all times and possess an outstandingly remarkable value which is significant within a physiographic regional context, and that studies of the effects of designation on uses within the river corridor, as well as upstream and downstream from the corridor, are analyzed and disclosed.*

Response: Federal law takes precedence over others: Section 16(b) of the Wild and Scenic River Act defines a river as "a flowing body of water or estuary, or a section, portions, or tributary thereof, including rivers, streams, creeks, runs, rills, kills, and small lakes." For purposes of evaluation, the volume of water flow need only be sufficient to sustain or complement the identified resource values. Rivers with intermittent or non-perennial flows already exist within the national river system.

Comment: *The state is also concerned about suitability findings for those streams where there are significant water diversions upstream of the subject reach, most of which are for irrigation. This is particularly true for the Dirty Devil River and the Fremont Gorge.*

Response: Federal law takes precedence over others: Section 16(b) of the Wild and Scenic River Act defines a river as "a flowing body of water or estuary, or a section, portions, or tributary thereof, including rivers, streams, creeks, runs, rills, kills, and small lakes." For purposes of evaluation, the volume of water flow need only be sufficient to sustain or complement the identified resource values. Rivers with intermittent or non-perennial flows already exist within the national river system.

Comment: *As a minimum, the State Engineer requests the BLM to catalog all valid, existing water rights that may be affected by designation as part of the Final EIS.*

Response: A catalog of all valid existing water rights along the Fremont River include, but are not limited to, Monte Elliot, Torrey Canal, Mills Ditch, Garkane Power Ditch, Capitol Reef National Park, Forest Sims, Caineville Canal, Hanksville Canal per the Bates decree and subsequent filings for high water. However, there are no water rights or in-stream flows related to suitability findings made in a land use plan decision, barring congressional action. Even if Congress were to designate rivers into the National WSR System, any such designation would have no effect on existing valid water rights. Section 13 (b) of the Wild and Scenic River Act states that jurisdiction over waters is determined by established principles of law. In Utah, the state has jurisdiction over water. Although the Wild and Scenic River Act implies a federal reserved water right for designated rivers, it does not require or specify any amount, and instead establishes that only the minimum amount for purposes of the act can be acquired. Because the State of Utah has jurisdiction over water, BLM would be required to adjudicate the right as would any other entity, by application through state processes. Thus, for congressionally designated rivers, BLM may assert a federal reserved water right to appurtenant and unappropriated water with a priority date as of the date of designation (junior to all existing rights), but only in the minimum amount necessary to fulfill the primary purpose of the reservation. In practice, however, federal reserved water rights have not always been claimed if alternative means of ensuring sufficient flows are adequate to sustain the outstandingly remarkable values. The RFO Proposed RMP would designate only 5 miles of Fremont River, known as the Fremont Gorge (located between Torrey and Capitol Reef National Park) as suitable for inclusion in the WSR System.

Comment: *The state finds the discussion regarding potential recommendations for additions to the NWSRS in the Draft RMP and EIS does not fully satisfy the requirements of federal or state law, or BLM policy and direction. The state believes it is imperative that the BLM properly disclose the reasons and rationale for determinations of suitability for proposed additions to the NWSRS, and to fully meet the requirements of state and federal law in doing so.*

Response: The rationale for suitability for determinations are contained in the Draft RMP/EIS Appendix 3 and comply with applicable Federal laws.

Comment: *The State of Utah has reviewed BLM's inventory of and proposed management for lands identified as possessing wilderness characteristics. The state does not believe that BLM has authority to create a category of management based solely on the characteristics of wilderness.*

Response: BLM's authority for managing lands to protect or enhance wilderness characteristics comes directly from FLPMA Section 202 (43 U.S.C. §1712). This section of BLM's organic statute gives the Secretary of the Interior authority to manage public lands for multiple use and sustained yield. Nothing in this section constrains the Secretary's authority to manage lands as necessary to "achieve integrated consideration of physical, biological, economic, and other sciences." FLPMA, Section 202(c)(2) (43 U.S.C. §1712(c)(2)). Further, FLPMA makes it clear that the term "multiple use" means that not every use is appropriate for every acre of public land and that the Secretary can "make the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use…" FLPMA, Section 103(c) (43 U.S.C. §1702(c)). FLPMA intended for the Secretary of the Interior to use land use planning as a mechanism for allocating resource use, including wilderness character management, amongst the various resources in a way that provides uses for current and future generations. BLM has long acknowledged that FLPMA Section 603 (43 U.S.C. §1782) requiring a one-time wilderness review has expired. All current inventory of public lands is authorized by FLPMA Section 201 (43 U.S.C. §1711). In September 2006, the Utah District Court affirmed that the BLM retained authority to protect lands it determined to have wilderness characteristics in a manner substantially similar to the manner in which such lands are protected when protected as WSAs. Finally, the Utah v. Norton Settlement Agreement does not affect BLM's authority to manage public lands. This Agreement merely remedied confusion by distinguishing between wilderness study areas established under FLPMA § 603 and required to be managed under § 603's non-impairment standard, and other lands that fall within the discretionary FLMPA § 202 land management process. See also IM 2003-275.

Comment: *Thus, the state asks BLM to provide a detailed explanation of the rationale and authority for managing lands solely because of wilderness characteristics.*

Response: BLM's authority for managing lands to protect or enhance wilderness characteristics comes directly from FLPMA Section 202 (43 U.S.C. §1712). This section of BLM's organic statute gives the Secretary of the Interior authority to manage public lands for multiple use and sustained yield. Nothing in this section constrains the Secretary's authority to manage lands as necessary to "achieve integrated consideration of physical, biological, economic, and other sciences." FLPMA, Section 202(c)(2) (43 U.S.C. §1712(c)(2)). Further, FLPMA makes it clear that the term "multiple use" means that not every use is appropriate for every acre of public land and that the Secretary can "make the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use…" FLPMA, Section 103(c) (43 U.S.C. §1702(c)). FLPMA intended for the Secretary of the Interior to use land use planning as a mechanism for allocating resource use, including wilderness character management, among the various resources in a way that provides uses for current and future generations. BLM has long acknowledged that FLPMA Section 603 (43 U.S.C. §1782) requiring a one-time wilderness review has expired. All current inventory of public lands is authorized by FLPMA Section 201 (43 U.S.C. §1711). In September 2006, the Utah District Court affirmed that the BLM retained authority to protect lands it determined to have wilderness characteristics in a manner substantially similar to the manner in which such lands are protected when protected as WSAs. Finally, the Utah v. Norton Settlement Agreement does not affect BLM's authority to manage public lands. This agreement merely remedied confusion by distinguishing between WSAs established under FLPMA § 603 and required to be managed under § 603's non-impairment standard, and other lands that fall within the discretionary FLMPA § 202 land management process. See also IM 2003-275.

Comment: *In addition to these cautions, the state requests that, in weighing management options for the Final RMP, BLM carefully consider recommendations submitted by local government and not manage*

lands to protect wilderness character where such management would, in the opinion of local governments, be contrary to the interests of local residents.

Response: BLM is aware that there are specific state laws relevant to aspects of public land management that are discrete from, and independent of, federal law. However, BLM is bound by federal law. As a consequence, there may be inconsistencies that cannot be reconciled. FLPMA requires that BLM's land use plans be consistent with state and local plans "to the extent practical" where state and local plans conflict with federal law, there will be an inconsistency that cannot be resolved. BLM will identify these conflicts in the Proposed RMP/Final EIS so that the state and local governments have a complete understanding of the impacts of the Proposed RMP on state and local management options.

Comment: *BLM's decisions on how to manage its lands directly affect Utah's ability to manage state trust lands to provide revenue for public schools and other beneficiary institutions.*

Response: The BLM acknowledges that the closure of adjoining public lands to oil and gas leasing may have a potentially negative impact on SITLA's mineral revenue. In Alternatives C and D, the closure of the 379,100 acres managed as WSA or wilderness area is nondiscretionary and beyond the scope of this plan.

In Alternatives N, A, B, and C, there are no SITLA lands affected by discretionary closure. Chapter 4 of the Proposed RMP/Final EIS has been revised to reflect the impacts of Alternative D on SITLA inholdings for the discretionary closures of 244,058 acres of public land. It should be noted that under any alternative, the proposed ACECs are not managed as closed to mineral leasing. Areas with wilderness characteristics are recommended as closed under Alternative D.

Comment: *The state believes the Draft RMP fails to address adequately these two major issues: The impact of BLM management decisions on state trust lands, and the need for a substantially more robust program for land tenure adjustments between the BLM and the State of Utah.*

Response: Regarding the first issue, an analysis of impacts on state trust lands was included under the socioeconomics section of the DRMP/DEIS (Section 4.6.1). Regarding the second issue raised, during processing of any proposed land tenure adjustment, BLM is required through the planning process to notify and coordinate with adjacent landowners and other interested parties. BLM's mandate is to retain lands in federal management unless the lands meet the criteria specified in FLPMA Section 203 for sale and other disposal actions as provided for under other authorities (such as exchange, R&PP) as discussed under "Lands and Realty Common to All Alternatives" section in Chapter 2, Table 2-18 of the Draft RMP/EIS.

Comment: *The RMP should specifically state that: (1) continued motorized administrative access on non-designated routes providing access to trust lands will be permitted to SITLA, its permittees, grantees and successors, notwithstanding any closure to the general public, to the extent such motorized access is currently available; (2) SITLA, its permittees and grantees may undertake reasonable maintenance activities to preserve and improve existing access across BLM lands, after consultation and appropriate environmental review by BLM and consultation with local governments as necessary; and (3) existing routes that are the sole access to state trust lands will not be closed and/or reclaimed without full BLM consultation with and approval by SITLA and the State.*

Response: The travel plan provides restrictions to the public for recreational purposes but does not restrict uses permitted or authorized by the BLM. State inholdings may or may not currently have access, depending on whether existing vehicle routes lead to them. Under different alternative scenarios, existing routes may be proposed for closure. BLM policy, as required by the Cotter decision (State of Utah v Andrus, 10/1/79), is that "the state must be allowed access to the state school trust lands so that those lands can be developed in a manner that will provide funds for the common school…" This decision

confined the issue of access to situations directly involving economic revenues generated for the school trust.

Comment: *We encourage the Richfield Field Office to continue meeting with Park Service, Forest Service, local government, and tribal government partners and to use these meetings as an opportunity to harmonize management across jurisdictional lines.*

Response: The RFO has coordinated in developing the Draft RMP/EIS with other federal agencies, local government, and tribal partners. The field office will continue to coordinate and develop these relationships with our partners through the Proposed RMP/Final EIS.

Comment: *The scope of activities anticipated under the Reasonably Foreseeable Development scenario (RFD) for fluid minerals needs clarification. The RFD does not clearly state whether its projections are limited to exploration, or include possible subsequent development based on likely economically recoverable discoveries.*

Response: The projection included in the RFD is not limited to exploration. The RFD also considers the production of oil and gas in the Sevier Frontal Play.

Comment: *Under Utah law, approved and perfected water rights are real property. BLM actions may affect the value of this real property. Because of this, the State Engineer recommends that the BLM consider the impact its actions may have on water rights in general and non-BLM water rights in particular.*

Response: BLM is obligated by law to honor valid, existing rights. Similarly, holders of valid, existing rights are obligated to honor federal laws regarding the use of federal lands for the exercise of those rights. BLM does not foresee frequent situations in which BLM's obligations under federal law would cause the agency to take actions that would prevent the holders from fully exercising their valid existing rights. BLM works diligently with the owners of valid, existing rights to prevent such situations from occurring. If the holder of a valid, existing right believes the BLM has taken an action that prevents the exercise of that right, the proper venue for determining equitable compensation or mitigation is in a court of valid jurisdiction, not within the context of a land use plan.

Comment: *Given the oil and gas leasing efforts by the BLM and others in the Richfield FO, and the recent discoveries of oil and gas in Sevier County, the state requests that the BLM consider and adopt a reasonable program for seismic and other exploratory work in the Richfield FO, but especially in Sanpete, Wayne, and Piute Counties.*

Response: The Draft RMP/EIS allows for seismic and other exploratory activities.

Comment: *According to Table 4-10, the Preferred Alternative would include significantly more miles of designated routes within non-WSA lands with wilderness characteristics than any other alternative. This is unusual given that two other alternatives propose significantly more miles of designated routes. See RMP/DEIS at Table 2-1. Please confirm and clarify that the disclosures contained in Table 4-10 are accurate.*

Response: A range of alternatives was considered in the Draft RMP/EIS to manage areas with wilderness characteristics. This range of alternatives is consistent with FLPMA. Table 4-10 is correct with respect to OHV management.

Comment: *In the 2007 review form for "A total of 76 individual site-specific comments were addressed" (76 comments), BLM references a number of SUWA comments that are identified by letter. These comments are not provided or explained. Please include or discuss SUWA's comments and BLM's response.*

Response: The review form was completed in 2004. The comments identified by letter correspond to areas evaluated for wilderness characteristics. The results are available in the RFO.

Comment: *The 2007 review forms do not include maps, greatly complicating any attempt to determine locations of the proposed areas. The Richfield Field Office is the only field office reviewed to date that has not provided maps. The absence of maps could be especially problematic if BLM concluded that some but not all of an area possesses wilderness character. Please make maps of these areas available.*

Response: The original review forms are signed. The review forms and maps are available for review in the RFO.

Comment: *The 2007 review forms posted on the Richfield Office's web page are not signed. Please confirm whether the Field Manager has made a final decision with respect to these forms and the evaluation they contain.*

Response: The original review forms are signed. The review forms and maps are available for review in the RFO.

Comment: *Several of the determinations conclude that parcels were previously determined to possess wilderness characteristics. It is counterintuitive that petitioners would renominate an area already determined to possess wilderness characteristics. Please clarify whether the boundary of the renominated areas are identical the boundaries of the previously analyzed areas. If so, please explain the basis for the renomination and reevaluation.*

Response: Some of the areas renominated had different boundaries than when originally inventoried in 1979. The areas were first found to not possess wilderness characteristics because of impacts. The boundaries of the renominated areas excluded impacts identified in the 1979 inventory and were thus found to possess wilderness characteristics.

Comment: *The 2007 review form indicates "BLM has not done a wilderness inventory of this area previously" and the list of reference material does not indicate that BLM conducted a site visit or reviewed aerial photographs of the area. However, determination appears based in part on "documentation from prior BLM resource inventories, aerial photographs, field observations, maps, etc." Please clarify whether BLM visited the area as part of the most recent review and what other information it considered.*

Response: As referenced in the Phonolite Hill review form, BLM conducted a field observation visit.

Comment: *Kingston Ridge. The 2007 review form mentions the "casual use" of mining claims. Please explain what this means.*

Response: Mining claims are present in the Kingston Ridge area but are not developed.

Comment: *Flat Tops. The 2007 review form states: "Based on the information SUWA provides, the BLM concludes there is a reasonable probability the Flat Tops proposed wilderness unit 'may have' wilderness character." A reasonable probability determination of wilderness character is an insufficient basis from which to impose management stipulations.*

Response: BLM stands by its determination. The BLM chose not to manage the Flat Tops area for wilderness characteristics in the Proposed RMP/Final EIS.

Comment: *76 comments / Fremont Gorge: BLM concluded that the lands identified in SUWA's "comment I" are "likely to have wilderness characteristics." The state objects to any planning decision that include*

measures to protect wilderness character without first definitively determining that the area in question does in fact possess wilderness character.

Response: BLM stands by its determination. The BLM chose not to manage the Fremont Gorge area for wilderness characteristics in the Proposed RMP/Final EIS.

Comment: *76 comments / Limestone Cliffs: BLM concluded that the lands "may to have wilderness characteristics." BLM also notes that the areas "have opportunities for both solitude and primitive recreation." The state objects to any planning decision that includes measures to protect wilderness character without first definitively determining that the area in question does in fact possess wilderness character. Likewise, the state objects to identification of wilderness characteristics without establishing the requisite "outstanding opportunities for solitude or a primitive and unconfined type of recreation."*

Response: BLM stands by its determination. The BLM chose not to manage the Limestone Cliffs area for wilderness characteristics in the Proposed RMP/Final EIS.

Comment: *76 comments / Mount Pennell and 76 comments / Ragged Mountain: BLM concluded that the lands covered by SUWA Comment A are "likely to have wilderness characteristics." Utah objects to any planning decision that includes measures to protect wilderness character without first definitively determining that the area in question does in fact possess wilderness character.*

Response: BLM stands by its determination.

Comment: *Labyrinth Canyon Extensions: The 2007 review form states both that the area was previously found "not to possess wilderness characteristics and dropped from further study," and that the "parcel has been already found to possess wilderness characteristics." Please reconcile these apparently contradictory statements.*

Response: Labyrinth Canyon was originally inventoried in 1979. A portion of this area was established as the North Horseshoe Canyon WSA, South Horseshoe Canyon WSA, and Labyrinth Canyon WSA. A portion of the area that was dropped from further study in 1990 was reinventoried in 1996 to 1999 and the remainder of the area was evaluated as the Labyrinth Canyon Extension.

Comment: *Phonolite Hill: BLM recognizes a "difference of opinion between BLM and SUWA regarding the significance of the intrusions and how they affect the appearance of naturalness." While BLM concurs that a "significant portion of the area is likely to have the appearance of naturalness," it does not otherwise attempt to resolve the difference. Please clarify whether the determination that the area has wilderness characteristics applies to the entire area or not. Please also clarify what steps BLM undertook to conclude that the areas "likely" to possess naturalness are in fact natural in appearance. Please explain how BLM proceeded to conclude that the area possesses wilderness character despite concluding, "primitive recreation potential exists at some level, not just at an outstanding level." We understand a wilderness characteristics determination to require outstanding opportunities for a primitive and unconfined type of recreation.*

Response: The determination applies to the entire Phonolite Hill area. The BLM used the Interdisciplinary Review Team to determine wilderness characteristics. As part of its wilderness characteristics inventory maintenance, BLM used a combination of field checks, Interdisciplinary Team review of data such as range files, county and BLM GIS data, and review of high-resolution 2006 aerial photographs. BLM evaluates an area for all of the wilderness characteristics including naturalness and outstanding primitive recreation opportunities and solitude. All of the wilderness values do not have to be present.

Comment: *Pole Canyon: The 2007 review form indicates, "the area(s) in question (or a significant portion of) is likely to have wilderness characteristics." However, the explanation appears to conclude*

otherwise. Please clarify BLM's conclusion and the standard applied to determine existence of wilderness characteristics. The 2007 review form also notes that this area is 4,700 acres in size and concludes that adjacency to an inventoried RARE II area is sufficient to satisfy the minimum size requirement. The 2007 review form for the Wildcat Mesa Extension appears to apply a different standard, noting that BLM considers only adjacent lands "administratively endorsed for wilderness management." Please clarify whether adjacent National Forest System lands are administratively endorsed for wilderness management. If not, please explain the apparent difference in standards.

Response: BLM stands by its determination. It does not conclude that adjacent to the U.S. Forest Service area is a factor (see Section 2(c) of the Wilderness Act for size consideration.) In some cases, some adjacent U.S. Forest Service lands are recommended for wilderness endorsement.

Comment: *Rock Canyon & Sweetwater Reef The 2007 review form indicates, "there is a reasonable probability that the area(s) in question (or a significant portion of) is likely to have wilderness characteristics." The form also notes that BLM believes that further consideration of the wilderness character of these areas is warranted. Please explain the conclusion that this area does possess wilderness character in light of the apparently incomplete information.*

Response: BLM stands by its determination. The BLM chose not to manage the Rock Canyon and Sweetwater Reef areas for wilderness characteristics in the Proposed RMP/Final EIS.

Comment: *Rocky Ford: The 2007 review form discusses SUWA's proposal but does not meaningfully discuss BLM's review of the proposal. The list of referenced material does not include aerial photos and the text does not mention site visits. Please clarify the steps taken by BLM to determine the existence of wilderness character in this area.*

Response: BLM stands by its determination. The BLM chose not to manage the Rocky Ford area for wilderness characteristics in the Proposed RMP/Final EIS.

Comment: *Wild Horse Mesa: The 2007 review form indicates, "there is a reasonable probability that the area(s) in question (or a significant portion of) is likely to have wilderness characteristics." Please clarify the process for determining what portions of the proposed area actually have wilderness character.*

Response: BLM stands by its determination. In Proposed RMP/Final EIS, the BLM chose to manage 8,700 acres of the 49,700 acres identified in the DRMP/DEIS for the Wild Horse Mesa area. As part of BLM's wilderness characteristics inventory maintenance, BLM performed a combination of data and on-site reviews. This included specific field inspections, Interdisciplinary team review of data such as range files, County and BLM GIS data, and high-resolution 2006 aerial photographs. The BLM's findings are described in the 1999-2003 wilderness reinventory documentation, as well as the 2007 wilderness characteristics review process (findings from this review are available on the Richfield Field Office planning website, and in the Administrative Record). The BLM is confident of high-standard approach used to inventory the public lands and stands by its findings, particularly the findings, which involved wilderness characteristics inventory maintenance.

Comment: *Wildcat Mesa Extension: The 2007 review form does not include the acreage for the subunits considered, precluding verification that the proposed units satisfy the 5,000-acre size requirement. Please provide this information. BLM discusses mineral claims and oil and gas leases. Please clarify the extent to which the Richfield Field Office considered the existence of undeveloped valid and existing rights with respect to wilderness characteristics. Units Band C are described as possessing opportunities for solitude as well as opportunities for primitive and unconfined recreation. Please clarify whether these opportunities rise to the requisite "outstanding" level. It appears that a previously approved ore road*

will bisect Unit C. It also appears that the BLM is deferring its determination of wilderness character to the RMP EIS. This would result in a management decision absent the prerequisite inventory.

Response: BLM stands by its determination.

Comment: *Consistent with this recognition, we encourage the BLM to revise management around natural springs and riparian areas to allow disturbance or occupancy within a buffer only when: (1) no practicable alternative is available AND all long-term impacts will be fully mitigated, or (2) the activity will benefit and enhance the spring/riparian area.*

Response: Managing the springs and riparian areas as described by the commenter would be contrary to the Utah Riparian Policy (IM-UT-2005-091). The buffer zones are not the only protection available for riparian zones. Mitigations for each riparian area would be developed on a case-by-case basis to best meet the conditions at the point of impact to implement the policies and procedures of the riparian program and other resources and land uses.

Comment: *The state objects if the Draft RMP does not make information supporting the VRM inventory class determinations proposed by the BLM available for review. The state also objects if the rationale for each VRM management class is not presented, or if the impact on resource uses in not fully disclosed in the analysis of impacts. The state has concerns that the BLM's identification of VRM inventory classes has led to a self-effectuating class protection scheme, rather than a source of information considered within the proposed resource use allocation schemes within each of the Draft's alternatives.*

Response: The VRI is based on criteria that provide for the objective evaluation of a landscape. The VRI is not the on-the-ground management tool. It is used to develop the VRM classes, with consideration from other resource activities.

Comment: *With this in mind, it appears the disclosure of VRM classification under the No Action Alternative is misleading. The No Action alternative reflects no change in current management direction. See Forty Most Asked Questions on CEQ NEPA Regulations, 46 Fed. Reg. 18026, 18027 (Mar. 23, 1981). As BLM notes on pages 3-28 and 4-96, current management direction is to manage WSAs as VRM Class 1. BLM should revise the EIS to reflect current management direction. As written, the RMP/DEIS under-represents current Visual Quality Objective (VQO) Class I management by 446,900 acres.*

Response: VRM is a land use planning decision. While IM-2000-096 directed the BLM to manage WSAs as VRM Class I, this change had to be made in an RMP, with appropriate NEPA documentation.

Comment: *Table 2-5, comparing vegetation related management decisions across alternatives, states that under alternatives C or D, BLM would not act to control insect pests. We understand that these two alternatives emphasize conservation values over commodity production. However, as forests throughout the west suffer from bark beetle and other insect pests, a decision to turn a blind eye to potential insect threats appears misplaced.*

Response: The Draft RMP/EIS considered a range of alternatives to control insect pests. Chapter 4 describes the impacts from this range of alternatives.

Comment: *Alternatives C and D anticipate treating 26,000 acres annually while alternatives A and B anticipate treating 73,600 acres annually. See RMP/DEIS at 2-5. Please clarify whether the acreage disclosed on page 2-5 is limited to mechanical treatments, and if not, the estimated percent of treatments that will be mechanical in nature.*

Response: Alternatives A and B would allow for a full range of vegetation treatment types, including prescribed fire and wildland fire use, mechanical, biological, manual, and chemical. The type of treatment

will be determined based on site-specific conditions and analysis. Alternatives C and D would use natural process and prescribed fire.

Comment: *Table 2-12a proposes to treat a significant amount of Ponderosa Pine forest - up to 171,140 acres under alternatives A and B. Please clarify what treatments BLM would utilize for Ponderosa Pine, and the need for this level of treatment.*

Response: The treatment acres proposal does not include a one-time treatment of all the acres of ponderosa forest type (43,000). Because of a frequent fire return interval, some areas could be treated several times, such as underburning to reduce understory. The treatment type would be determined on a case-by-case basis to best meet the conditions of the stand at the time of treatment. These acres were developed to allow for treatments that more closely mimic the historic fire return intervals.

Comment: *Page 4–458 provides a per-acre cost estimate for mechanical vegetative treatment. Please provide a per-acre cost estimate for wildland fire suppression.*

Response: The Proposed RMP/Final EIS has been revised to include a per-acre cost estimate of fire suppression in Chapter 4.

Comment: *Alternative B contains some issues needing clarification. The "Adaptive Management" section (2.4) states: "Land use plan level decisions are not subject to Adaptive Management." In general, this is accurate; however, the proposition may establish limits that could be important to timely management decisions. Please consider alternative language.*

Response: The Adaptive Management language on page 2-9 of the Draft RMP/EIS has been revised to read: "Land use plan-level decisions would not be immediately adaptable. These include the goals and objectives, allowable uses, management actions, and special designations."

Comment: *In section 2.6.1.9., BLM provides a description of using grazing to improve wildlife habitat.*

Response: The commenter's recommendation can be implemented by adjusting the terms and conditions associated with a livestock grazing permit. Making these decisions on a permit-by-permit basis ensures flexibility in management and that prescriptions are targeted to meet the conditions of a given site, rather than at a landscape level in the RMP.

Comment: *Section 2-10 specifically deals with the management of the Henry Mountain Bison and Mule Deer. Alternative B states, "[d]evelop a habitat management plan (HMP) for bison, mule deer and other big game species within the Henry Mountain area in consultation with UDWR." It is the state's expectation that the Utah Department of Agriculture and Food's Grazing Improvement Program (UDAF/UGIP) and the Public Lands Policy Coordination Office will also be involved as a cooperating agency in this planning.*

Response: The BLM is required to work closely with the State of Utah and its various departments. The identification of cooperating agencies for future NEPA projects is outside the scope of the NEPA document.

Comment: *In section 2-12, "Hazardous Fuels Reduction," grazing should be specifically listed as a tool to accomplish this goal.*

Response: The Draft RMP/EIS has been modified to include an alternative that provides for using livestock grazing for site-specific fuels management outside the season of use.

Comment: *The RMP/DEIS discloses total AUMs within the field office, but not the number of AUMs associated with each allotment. As written, it is not clear whether alternatives B, C, and D would hold*

permitted use constant for each allotment, or whether reallocation of AUMs between allotments would occur without changing the overall number of AUMs.

Response: The Draft RMP/EIS includes allocations by allotment in Appendix 7.

Comment: *Chapter three of the RMP/DEIS, p. 3-65, indicates that an interdisciplinary team made up of BLM employees conducts watershed assessments and that these watershed assessments determine whether the Standards for Rangeland Health are being met. Please clarify how many watersheds were assessed and their condition with respect to the four identified standards.*

Response: Approximately 50 percent of the allotments have had a final determination made. The remaining 50 percent is being assessed. Of the 50 percent with a final determination, 100 percent are at properly functioning condition, 50 percent have met upland, 50 percent have met riparian, 50 percent have met species maintenance, and 50 percent have met water quality.

Comment: *We feel that the effects analysis for cultural resources within the DEIS could be significantly enhanced and strengthened by additional analysis techniques. Areas to be examined could include: Bull Creek Archaeological District, Horseshoe Canyon South WSA, the Trough Hollow area, the Dirty Devil River area, the Fremont Gorge/Cockscomb area, the Horseshoe Canyon area, the Quitchupah archaeological district area, the No Man's Canyon area, the Robbers' Roost Canyon area, the Fish Creek area, the Maidenwater Creek area, Poison Springs Canyon, and other areas specified as potential National Register nomination areas. In addition, the state recommends the BLM check to ensure that other potential areas of high cultural resource densities or values are identified and examined prior to ground-disturbing activities.*

Response: As noted in 40 CFR 1503.3, a cooperating agency's comments on an EIS are required to include a level of specificity. Specifically, "when a commenting agency criticizes a lead agency's predictive methodology, the commenting agency should describe the alternative methodology which it prefers and why." In addition to the general cultural impacts, the Draft RMP/EIS includes additional analysis of each of the areas noted by the commenter in the ACEC section, all of which included cultural resources as a relevance and importance (R&I) value. Given the general nature of RMP-level decisions, further site-specific analysis on specific areas/cultural sites is best addressed at the implementation level. In addition, on page 2-17 the Draft RMP/EIS specifically requires that cultural resource inventories be completed "prior to allowing permitted surface disturbing activities…" These inventories would be required throughout the RFO, not just in "areas of high cultural resource densities or values" as recommended by the commenter.

Comment: *We have concerns about the designation of cultural resource site use allocations in the proposed alternatives. Although we recognize that such designations are required of the BLM, our concern is with stipulating a particular designation for an entire class of sites (e.g., assigning all "Temporary Camps" to "public use" or "scientific use") without consideration of the nature of each individual site. Such designation fails to consider the individual characteristics of sites within each class, and it is very easy to visualize situations where one or more of the stipulated designations would be either inappropriate for a given site or potentially harmful. Furthermore, under the preferred alternative, the vast majority of sites are allocated to scientific use, with little opportunity to designate sites appropriately for public use. This appears to cut the public out of the enjoyment and use of archaeological and cultural sites in the Richfield FO area. No other BLM office has attempted such a designation. Instead, most have simply stipulated general goals for percentages of sites assigned to each category. We recommend that the Richfield FO adopt the allocation technique (assigning percentages) used by other BLM offices. Additionally, Table 2.6a identifies various resource site use allocations that would apply to different site types. This table does not provide any explanation of the terms used or what would be allowed under*

"public use," "scientific," "discharged," or any other allocation. Please explain what these allocations provide and how they would be implemented.

Response: Scientific use does not eliminate opportunities for public use of a cultural site. In addition, the Draft RMP/EIS Chapter 2 (page 2-18) includes language that provides for adjustments in specific sites or site types as conditions change. Such changes could include making individual sites available for public use, after appropriate scientific studies have been completed. As for the explanation of the terms used and allowable uses under each, the Draft RMP/EIS includes a reference to the BLM Manual 8110 (*Identifying and Evaluating Cultural Resources*), which is readily available to the public and describes the information requested by the commenter.

Comment: *We note that the area around the Bull Creek Archaeological District is shown as open to fluid minerals leasing under all or nearly all of the alternatives. However, in the cultural resources section this area is listed as closed to surface disturbance for all alternatives. Leasing carries the strong implication that the BLM will allow some development (i.e., surface disturbance) of the lease, even if only a single well, in a leased area. Thus, allowing leasing in the Bull Creek Archaeological District appears to create inconsistency between the alternatives. We recommend that the final plan resolve this discrepancy.*

Response: The Draft RMP/EIS was revised to eliminate the inconsistencies with the Bull Creek Archaeological District and minerals leasing.

Comment: *The impacts analysis for leasing Minerals and Energy in the cultural resource section of Chapter 4 discusses potential impacts only from seismic operations. We recommend that the discussion be made parallel to all the other BLM RMPs and discuss the other potential impacts from leasing, such as drilling or well development.*

Response: The Draft RMP/EIS impact analysis was revised to clarify the impacts from oil and gas leasing to cultural resources.

Comment: *Under the section for Recreation Decisions, Table 2-16, page 2-63, the DEIS addresses issues with "Criteria for Vending." We were unable to find a definition of vending and would like to know what constitutes vending with respect to this plan. Vendors and concessionaires are important to the success of State Parks. We do not understand why the BLM in alternatives B, C, and D wishes to restrict vending. For instance, Alternatives C and D disallow vending at organized events, does this mean an event could not sell a T-Shirt memorializing it? Please clarify. The state recommends the BLM define vending and remove the proposed restrictions, but keep the proposed action statement of authorizing vending on a case-by-case basis.*

Response: Criteria for vending is found in 43 CFR 2930 and BLM Handbook 2930-1. These sources also define what vending entails. The BLM is considering a range of alternatives to address vending in response to issues raised through scoping. The presence of unregulated vending may be inappropriate in some locations.

Comment: *3. North Hatch Canyon The Big Ridge Area: (Township 31 South, Range 15 East, Sections 14 & 23). The road across Big Ridge is currently open to OHVs, but only via roads through the Glen Canyon Recreation Area, which is closed to non-street legal vehicles. The existing route from North Hatch Canyon through Sections 14 and 21 should be left open to provide OHV access to the 19.1 miles of open routes on Big Ridge. While heavy maintenance will be needed before this route can be used, we think it may be worth it.*

Response: This route is physically closed due to a rock fall. There are also safety concerns with the steep slope and condition of the route up to the rock fall. The route has been identified as an open designated route. However, maintenance and/or reconstruction would be required to physically reopen this route.

More specific details of the maintenance project would need to be developed and analyzed in a site specific NEPA analysis following completion of the RMP.

Comment: *4. Poison Spring Canyon/Burt Mesa Area: (Township 31 South, Range 14 East, Sections 18 &19). The route overlooking the Dirty Devil River should remain open for OHV use to the point where it becomes impassable, approximately 1.2 miles north from the point where it is closed in Alternative B. This section of the road provides outstanding viewing of the Dirty Devil River and adjacent canyons.*

Response: Several routes were analyzed in this area and designated for consistency with other resource decisions of the RMP. Routes were identified using a variety of data sources and route length determined based on that data. This route has been reassessed by BLM staff specialists. Further ground-truthing would be required to extend the route beyond what has been indicated on the route data. This would need to be completed along with site-specific NEPA analysis following completion of the RMP.

Comment: *5. Goat Water Point Area: (Townships 30 & 31 South, Ranges 12 & 13 East). A short access route between existing routes on Goat Water Point and the east/west route north of the point is needed to complete a large OHV loop on the north end of the Henry Mountains. The attached map (Attachment H) shows routes that should be considered for this connection.*

Response: This proposed route was not analyzed. Although existing routes have been identified north and south of the private property, new construction would be required to connect these routes, avoiding the private property and a reservoir development. Since new construction is needed, site-specific NEPA analysis would need to be completed.

Comment: *On page 1-6, BLM states that the RMP will apply only to public lands and, where appropriate, split-estate lands where the subsurface mineral estate is managed by the BLM. BLM should re-consider whether it can impose its standards on split estate lands where it does not own the surface. This action diminishes the rights of the surface owner, whether fee or trust lands, to exploit its lands in the manner it sees fit. So long as the operator of an oil and gas well has obtained a satisfactory surface use agreement that can be included in its Application for Permit to Drill to the BLM, BLM should not unilaterally limit mineral development.*

Response: As stated in Table 2-19 of the Draft RMP/EIS: BLM would lease split-estate lands according to BLM RMP stipulations for adjacent or nearby public lands or plans of other surface management agencies as consistent with Federal laws, 43 CFR 3101, and the surface owner's rights.

Comment: *Page 1-13 contains a discussion of the BLM's direction under EPCA. Paragraph 3 states that the BLM will "weigh the relative resource values, consistent with FLPMA." None of the alternatives adequately analyze the loss of revenue from formally or effectively eliminating mineral development in many of the lands subject to Special Designations and restrictive viewsheds. There are references to number of wells to be allowed under the alternatives, but no indication what that means in terms of lost revenue to the United States, the State of Utah, local governments, and Utah's school trust, and the effect of that revenue loss under EPCA.*

Response: Section 4.4.6.1.1.1 of the Draft RMP/EIS includes an Energy Policy and Conservation Act (EPCA) evaluation by alternative. The dollar value ranges are too broad to determine any cost losses from EPCA quantitatively. The Reasonably Foreseeable Development (RFD), Appendix 12, foresees a certain level of oil and gas development in the study area as a whole. Constraints in the various alternatives could impact exactly where development occurs. However, nearly 80 percent of the oil and gas wells projected in the RMP are located along the west side of the planning area where public lands are either open to leasing under standard terms or open to leasing with controlled surface use or timing stipulations, as stated in the RMP Chapter 4 section "Alternative N Leasable Minerals—Oil and Gas." Thus, restrictions to oil and gas development on BLM-managed lands would likely have minimal revenue impacts to the

United States, the State of Utah, local governments, and Utah's school trust. Revenue impacts under EPCA would likely be minimal, too.

The BLM acknowledges that the closure of adjoining public lands to oil and gas leasing may have a potentially negative impact on SITLA's mineral revenue. In alternatives C and D, the closure of the 379,100 acres managed as WSA or Wilderness Areas is nondiscretionary and beyond the scope of this plan.

In alternatives N, A, B, and C, there are no SITLA lands affected by discretionary closure. Chapter 4 of the Proposed RMP/Final EIS has been revised to reflect the impacts of Alternative D on SITLA inholdings for the discretionary closures of 244,058 acres of public land. It should be noted that under any alternative, the proposed ACECs are not managed as closed to mineral leasing. Areas with wilderness characteristics are recommended as closed under Alternative D.

Comment: *Page 2-139 should specifically reference the need for federal acquisition of state school trust lands that are captured by federal reservations and withdrawals such as wilderness study areas, and that all land tenure adjustments necessary to accomplish this goal will be a priority, in accordance with applicable BLM policy guidance (the BLM Manual provisions re: state exchanges).*

Response: The Draft RMP-EIS Table 2-18 (page 2-77) states "Give exchanges with the State of Utah priority consideration." Appendix 5 addresses criteria for all other land tenure adjustments.

Comment: *BLM should substantially increase the areas identified as available for disposition by exchange with the State of Utah, in order to fully permit the elimination of state inholdings in withdrawn areas.*

Response: The Draft RMP-EIS Table 2-18 (page 2-77) states "Give exchanges with the State of Utah priority consideration." Appendix 5 addresses criteria for all other land tenure adjustments.

Comment: *In addition, state selection (i.e., quantity grants under the Utah Enabling Act, indemnity selections under the Utah Enabling Act, 43 U.S.C §§ 870-871, and other applicable statutes) should be mentioned as an equally preferred method of land disposition as land exchanges. On page 3-72, paragraph 3.4.5.1.1 (Disposals) should be modified to indicate that the preferred method of disposal is land exchange and that facilitating acquisition of state trust lands inholdings in wilderness study areas and other sensitive areas through land exchange is considered an important public objective, and will be given priority.*

Response: The Draft RMP-EIS Table 2-18 (page 2-77) states "Give exchanges with the State of Utah priority consideration." Appendix 5 addresses criteria for all other land tenure adjustments.

Comment: *Non-BLM mineral lands are directly impacted by RMP decisions. This is not recognized as an impact within the RMP. The largest source of revenue for the Utah school trust is from oil and gas bonuses and royalties. In much of Utah, in order to establish an economic oil and gas resource play, the exploration company needs a large geographic area.*

Response: The BLM acknowledges that the closure of adjoining public lands to oil and gas leasing may have a potentially negative impact on SITLA's mineral revenue. The "Socioeconomics" section in Chapter 4 of the Proposed RMP/Final EIS has been revised to include further analysis of the impacts on SITLA lands.

Comment: *BLM decisions to withdraw mineral lands from leasing in WSAs, areas with wilderness characteristics, ACECs, and other areas directly affects the economic viability of state trust lands inholdings in those areas, particularly for oil & gas. Restrictive designations additionally increase the*

cost of access to trust lands, may impair marketability, and require the expenditure of trust resources in pursuing land exchanges with BLM. These facts should be acknowledged appropriately in the discussion of social and economic impacts. See RMP/DEIS at p. 3-97.

Response: The BLM acknowledges that the closure of adjoining public lands to oil and gas leasing may have a potentially negative impact on SITLA's mineral revenue. In alternatives C and D, the closure of the 379,100 acres managed as WSA or Wilderness Areas is nondiscretionary and beyond the scope of this plan.

In alternatives N, A, B, and C, there are no SITLA lands affected by discretionary closure. Chapter 4 of the Proposed RMP/Final EIS has been revised to reflect the impacts of Alternative D on SITLA inholdings for the discretionary closures of 244,058 acres of public land. It should be noted that under any alternative, the proposed ACECs are not managed as closed to mineral leasing. Areas with wilderness characteristics are recommended as closed under Alternative D.

Comment: *Appendix 5, page 5-1. We also encourage BLM to delete numbered paragraph 2. It may hinder necessary exchanges to acquire state inholdings. FLPMA does not require that there be no net loss of public lands.*

Response: The Draft RMP-EIS Table 2-18 (page 2-77) states "Give exchanges with the State of Utah priority consideration." Appendix 5 addresses criteria for all other land tenure adjustments. Appendix 5, land tenure adjustment criteria 2 allows for "a net gain of important and manageable resource values on public lands" and not a net gain or loss of public land. Proposed disposal actions must meet one or more of the criteria in Appendix 5 before they can be considered for any form of land tenure adjustment.

Comment: *Because of this process, the state strongly recommends the BLM preserve the seven potential reservoir sites listed below. Due to time and budget constraints an on-site investigation, which will evaluate construction issues, has not yet been completed. As soon as practicable, on-site evaluations will be completed. Aldrich Reservoir, supplied by the Fremont River and located on Sandy Creek in T29S R08E section 22, would impound 2,000 acre-feet of irrigation water. Antimony Reservoir would be located one and a half miles to the south east of the town of Antimony in T31 S R02W section 26. Caineville Wash would be an off-stream site, west of the town of Caineville in T28S R08E section 35. Road Creek (upper) originally proposed in the state engineers report to the Governor in 1943 is located just west of Loa in T28S R02E section 3 on Road Creek. Thurber dam (Bicknell Bottoms) would be located two miles southeast of the town of Bicknell in T29S R04E section 7. Torrey (poverty Flat). The Bureau of Reclamation and the Wayne County Water Conservancy District are presently studying this site. Torrey (Upper) is near the larger site and would store 2,000 acre-feet of exchange irrigation water, for water rights upstream of the reservoir.*

Response: Under FLPMA Title V and 43 CFR 2800, the state could apply to obtain reservoir ROWs for these areas. However, until such action occurs, the areas will be managed as multiple use by BLM. Should BLM receive an application to purchase one of the parcels, the state would have an opportunity to comment at that time. If a patent is issued and the state has an existing reservoir ROW, the patent document would be issued subject to that prior existing right.

Comment: *Under the preferred alternative, there is a potential problem with the transportation of coal produced from the Henry Mountains coalfield, should such development occur. The route designations map (2-18 for Alternative B) shows two networks of routes providing access to the central part of the coalfield in T. 32 S., R. 8-10 E.; one route heads south from Highway 24 along the Notom road, and the other heads west from Highway 95 in the area between the Mount Ellen-Blue Hills and Mount Pennell (spelled incorrectly as "Pennel" on map 3-14) WSAs. While there are two alternative routes where a paved road could be constructed to truck coal out of the Henry Mountains coalfield, the route to the east, which is the most favorable for coal development from the standpoint of proximity to distant rail access at*

Green River, appears to be the least favored by the BLM because it is deemed an area of right-of-way avoidance in alternative B (Map 2-31).

Response: At the time of coal leasing, if a mine is proposed for development, access and haul routes would be considered at that time.

Comment: *The UDWR strongly encourages the BLM to mandate off-site mitigation for surface disturbing actions on projects that are expected to have long-term impacts to crucial wildlife habitats. Further, the BLM should include an index (for example, 1 acre impacted: 4 acres mechanically restored) in the RMP for all future development in crucial wildlife habitat.*

Response: Table 2-10, page 2-26 includes a decision under common to all alternatives that states "Where appropriate, require onsite mitigation when surface disturbance cannot be avoided on a site-specific basis, and consider offsite (compensatory) mitigation where onsite mitigation is impractical." The compensatory mitigation is better determined on a site-specific/species-specific basis as projects are proposed.

Comment: *Previously, the UDWR submitted a comment suggesting that specific protection and management of special status species should be discussed in the RMP. At that time, the draft RMP stated that BLM actions would be consistent with guidelines provided by the U.S. Fish and Wildlife Service or other agencies. However, no mention was made in other sections of how that may affect oil and gas leasing, surface mining, off-road vehicle travel, or other land uses. This draft also fails to include that information.*

Response: The Draft RMP/EIS includes management actions under Fish and Wildlife Common to All Alternatives (Table 2-10, page 2-26) that support UDWR management plans and objectives. The specific conservation actions are specified in UDWR management plans, such as the *Utah Comprehensive Wildlife Conservation Strategy* (UDWR 2005c). Impacts from RMP management actions for special status species to oil and gas leasing, surface mining, OHV travel, or other land uses are discussed generally in Chapter 4.

Comment: *The Richfield RMP should be consistent with the newly developed Utah Wildlife Action Plan (UWAP). The UWAP describes how species of concern will be managed in the State of Utah. These species should be included in the RMP where special status species are discussed.*

Response: The Draft RMP/EIS includes management actions under Fish and Wildlife Common to All Alternatives (Table 2-10, page 2-26) that support UDWR management plans and objectives. The specific conservation actions are specified in UDWR management plans, such as the *Utah Comprehensive Wildlife Conservation Strategy* (UDWR 2005c). Impacts to wildlife habitat from oil and gas leasing management actions are discussed generally in Section 4.3.9, page 4-164. As leases are proposed, site-specific NEPA analysis, including impacts to fish and wildlife habitat, will be conducted.

Comment: *On behalf of the state, UDWR personnel from our Southern and Southeastern regional offices served as interdisciplinary team members and contributed a significant amount of time to development of initial drafts of the RMP. Many of the preliminary agreements that came out of this process are not reflected in the DEIS. Potential transplants of wildlife were addressed during this process, as were issues affecting management of bison, mule deer, sage-grouse, and bighorn sheep. Rather than tackle these issues now, the Draft RMP states that a Habitat Management Plan (HMP) will be developed later. Much work has been invested in this cooperative process over the past three years, and the state prefers to see these issues resolved within the scope of this RMP if possible.*

Response: This detailed information is outside the scope of the RMP; however, BLM included appropriate management actions that would allow for the implementation actions to occur. Reintroductions are discussed in the Draft RMP/EIS Table 2-9, page 2-25. BLM appreciates the efforts

put forth by UDWR personnel, and BLM plans to use the information generated in implementation planning, such as HMPs.

Comment: *On page 4-466, the RMP/DEIS states that under Alternative A, BLM would reallocate AUMs dedicated to wildlife back to livestock grazers and that the Utah Department of Wildlife Resources would "forfeit" the investment it made in purchasing "AUMs from livestock permit holders for the purpose of increasing available forage for wildlife." These AUMS were allocated to wildlife through purchase and an associated resource management planning amendment executed in the late 1980s. To the extent state rights are involved, the state does not agree to "forfeit" any of its rights.*

Response: The BLM is responsible for managing wildlife habitat in coordination with the UDWR, which is responsible for managing wildlife populations. The BLM is also responsible for managing livestock grazing according to the legal requirements of the Taylor Grazing Act and FLPMA. The allocation of forage is a discretionary action and does not involve the granting of any legal "rights."

Comment: *Several years ago, the BLM requested that conservation groups identify willing sellers and acquire grazing permits where conflicts with bison existed. This was done, and a conservation group acquired a grazing permit in order to help resolve conflicts between bison and domestic livestock. BLM officials have stated that some of these conflicts existed because forage was originally over-allocated on some allotments. If this is the case, the RMP should address the issue of forage over-allocation.*

Response: Forage allocations are contained in the Draft RMP/EIS in Appendix 7. If future monitoring indicates that the forage resource is being over utilized, the Utah Guidelines for Grazing #12 specify, "Where it can be determined that more than one kind of grazing animal is responsible for failure to achieve a standard, and adjustments in management are required, those adjustments will be made to each kind of animal, based on interagency cooperation as needed, in proportion to their degree of responsibility."

Comment: *Also, in desert bighorn sheep habitat, the UDWR requests that forage that is not allocated to cattle because of terrain be considered for allocation to wildlife (for bighorn sheep).*

Response: Terrain was considered in the initial livestock forage allocation process. No forage was allocated to livestock in areas too steep and/or rugged for livestock.

Comment: *UDWR is concerned with the general language describing impacts to fish and wildlife from leasable minerals beginning on page 4-164. It states that impacts to wildlife will be dealt with on a case-by-case basis. We recommend that the BLM develop a long-term plan for mineral extraction and wildlife mitigation within the area covered by this RMP.*

Response: The Draft RMP/EIS includes seasonal and distance restrictions on oil and gas leasing where appropriate under the multiple-use analysis.

Comment: *The UDWR recommends that the RMP require active motorized vehicle management, monitoring and cooperation with local communities that may potentially restore OHV use in currently closed areas or preclude OHV use on currently open routes/areas if evidence derived from future surveys or research indicate that OHV use has deleterious or negligible impacts, respectively, to crucial wildlife habitat.*

Response: The RMP includes a range of alternatives that consider OHV area and route designations. Implementation planning requires active OHV management, which would address these issues. BLM administers OHV management under EO 11646 and EO 11989 as well as 43 CFR 8340. Draft RMP/EIS Table 2-17, page 2-63, states "Coordinate OHV management with other agencies where possible (U.S. Forest Service, National Park Service, State of Utah, counties, and communities)."

Comment: *The draft RMP discusses several options for dealing with public lands that have the potential for disposal or transfer. Maps 2-22 and 2-23 identify several of these parcels in Sanpete and Sevier counties that are either located within, or lie adjacent to, State Wildlife Management Areas. We strongly encourage the BLM to withdraw the following parcels from the list of potential disposals: SA01, SA06, SA09, SA10, SA11, SA12, SA13, SA14, SA25, SA29, and SV05.*

Response: BLM's mandate is to retain lands in federal management unless the lands meet the criteria specified in FLPMA Section 203 for sale and other disposal actions as provided for under other authorities (such as exchange, Recreation and Public Purposes [Act][R&PP]) as discussed under the "Lands and Realty Common to All Alternatives" section in Chapter 2, Table 2-18, of the Draft RMP/EIS. The local governments were given the opportunity to identify isolated and/or uneconomical parcels that they may have interest in as part of the RMP process. Table A5-1 in the Final RMP/EIS will be modified to identify these parcels as having DWR interest associated with the adjacent state wildlife management areas. Local, county, or state governments may apply for any of the parcels identified in the tables for FLPMA Section 203 sale or other public land under other current authorities for public purposes. Preference is generally given to applicants that would provide a public benefit.

Comment: *Map 2-24 illustrates several proposed disposal parcels in Wayne County that are identified as crucial mule deer winter range. Specifically, the UDWR is concerned that parcels WN03, WN03, and WN04, if converted to agriculture, could greatly increase depredation issues in this area. The UDWR hopes the BLM will consider these issues and consult with the UDWR prior to disposal of these parcels.*

Response: In Table 2-18 of the Draft RMP/EIS, the last bullet of the desired outcomes identifies the initial criteria used to identify the parcels for sale. This bullet has been modified in the Final EIS to further clarify BLM's preliminary review process. Additional site-specific inventories would be completed in the NEPA analysis and decision-making process, at which time resources may be identified that would preclude disposal suitability. If determined suitable for disposal, publication notices would be sent to federal, state, local governments, and interested parties to provide opportunity for coordination regarding land tenure adjustment actions.

Comment: *Domestic sheep diseases are a significant threat to desert bighorn sheep. We recommend that the BLM convert all allotments identified in the Henry Mountains Desert Bighorn HMP to cattle. Further, because of the potential threat of transmission of malignant cataharral fever to bison, we recommend conversion of all allotments east of Capitol Reef National Park to cattle (specified on p. 2-43).*

Response: BLM acknowledges that domestic sheep may pose a threat (e.g., cataharral fever) to Desert bighorn sheep and bison. However, the RFO has no active sheep allotments in the Henry Mountains Desert Bighorn HMP or in any of the allotments east of Capitol Reef National Park.

Comment: *Stipulations implemented by some BLM Field Offices restrict surface disturbing activities in desert bighorn sheep habitat during the rut (October 15 to December 15).*

Response: The Final RMP/EIS has been modified to include this stipulation in Appendix 11, page A11-15.

Comment: *The preferred alternative offers only seasonal protection within 0.5 miles of Sage Grouse leks and provides no buffer around brooding habitat. See RMP/DEIS at p. 2-31. The buffer used for protection of sage-grouse habitat from development should be 2 miles, following the currently accepted management guidelines set forth by Connelly et at. (2000) and the* 2002 Utah Strategic Management Plan for Sage-Grouse *(two documents that should be cited and referenced to provide guidance in sage-grouse management issues).*

Response: The Proposed RMP has been revised to include a seasonal restriction of 2 miles around sage grouse leks from March 15 through June 1 and a seasonal restriction around brooding/nesting habitat from April 1 through July 15.

Comment: *There are no alternatives or reparations known to suitably replace a sage-grouse lek. As such, the UDWR recommends the BLM adopt appropriate avoidance measures for sage-grouse habitat, i.e., preclude new ROWs with high-profile structures (such as buildings, storage tanks, overhead powerlines, wind turbines, towers, and windmills) within 2 miles of a greater sage-grouse lek and/or in crucial brood rearing and winter habitats.*

Response: The Proposed RMP has been revised to prohibit aboveground structures within 2 miles of leks from March 15 through June 1.

Comment: *All Alternatives "prohibit long-term surface disturbing activities" within important sage-grouse habitats. The RMP should define (i.e., quantify) "long-term" activities. Three weeks of disruptive activity in close proximity to a lek or brooding habitat may be considered short-term, but still result in significant disruptions to sage grouse breeding habits. Again, as stated above, these stipulations should be based on guidelines detailed in Connelly et at. (2000) and the* 2002 Utah Strategic Management Plan for Sage-Grouse.

Response: Long-term is defined on page 4-2 of the Draft RMP/EIS as lasting beyond 5 years. The Proposed RMP has been revised to include a seasonal restriction of 2 miles around sage- grouse leks from March 15 through June 1 and a seasonal restriction around brooding/nesting habitat from April 1 through July 15.

Comment: *The Larry Canyon, Sam's Mesa Box Canyon, Twin Corral Box Canyon, and Maidenwater Springs areas provide important habitat for desert bighorn sheep and bison. The discussion on page 2-91 and associated analysis should be revised to reflect this.*

Response: The discussion of outstandingly remarkable values for Wild and Scenic Rivers is included in Appendix 2, *Wild and Scenic River Eligibility and Tentative Classification Report*. Supporting information for this report is in the administrative record. Impacts to fish and wildlife from the wild and scenic river management actions is discussed generally in Section 4.3.9.

Utah Department of Education

Comment: *As more specifically set forth below, the State Board of Education believes that the Draft RMP fails to address adequately these two major issues: the financial impact, including economic opportunities lost, of BLM management decisions on school trust lands, and the need for a substantially more robust program for land tenure adjustments between the BLM and SITLA.*

Response: The BLM acknowledges that there are important fiscal impacts from oil and gas (including coalbed methane) activities on school trust lands, and these have been incorporated in the Proposed RMP/Final EIS in the socioeconomic analysis in Chapter 4. The potential fiscal impacts, and the potential economic impact from loss of spending in the local economy because of SITLA oil and gas wells foregone have also been calculated for Alternative D and added to the socioeconomic analysis in Chapter 4. The comment regarding a program for land tenure adjustments between BLM and SITLA is addressed in the "Lands and Realty" section of the comments and responses.

Comment: *For this reason, the State Board of Education strongly disagrees with the BLM's assumption that non-BLM lands would be minimally directly impacted by RMP decisions, since BLM does not make land decisions on non-BLM lands.*

Response: The BLM acknowledges that the closure of adjoining public lands to oil and gas leasing may have a potentially negative impact on SITLA's mineral revenue. In alternatives C and D, the closure of the 379,100 acres managed as WSA or Wilderness Areas is nondiscretionary and beyond the scope of this plan.

In alternatives N, A, B, and C, there are no SITLA lands affected by discretionary closure. Chapter 4 of the Proposed RMP/Final EIS has been revised to reflect the impacts of Alternative D on SITLA inholdings for the discretionary closures of 244,058 acres of public land. It should be noted that under any alternative, the proposed ACECs are not managed as closed to mineral leasing. Areas with wilderness characteristics are recommended as closed under Alternative D.

Comment: *The BLM's decisions on how to manage its lands directly affect the ability of the Utah public schools to receive the revenue from profitable management of school lands, as intended by Congress when they were granted. We suggest an analytical assumption sentence be included which says "The BLM appreciates that our decisions on how to manage our lands directly affect the ability of the Utah public schools to receive the revenue from profitable management of these lands, as intended by Congress when they were granted."*

Response: The BLM acknowledges that the closure of adjoining public lands to oil and gas leasing may have a potentially negative impact on SITLA's mineral revenue. In alternatives C and D, the closure of the 379,100 acres managed as WSA or Wilderness Areas is nondiscretionary and beyond the scope of this plan.

In alternatives N, A, B, and C, there are no SITLA lands affected by discretionary closure. Chapter 4 of the Proposed RMP/Final EIS has been revised to reflect the impacts of Alternative D on SITLA inholdings for the discretionary closures of 244,058 acres of public land. It should be noted that under any alternative, the proposed ACECs are not managed as closed to mineral leasing. Areas with wilderness characteristics are recommended as closed under Alternative D.

Comment: *Specifically, the BLM does not consider multiple use or sustained use mandates required by FLPMA in the "Lands and Realty Objectives" section. None of the alternatives adequately analyze the loss of revenue from formally or effectively limiting or eliminating the mineral development in many of the lands subject to special designations and restrictive viewsheds. There are references to number of wells to be allowed in Appendix 1, Reasonable Foreseeable Development Scenario, but no indication what that means in terms of lost revenue to the United States, the State of Utah, local governments.*

Response: The BLM acknowledges that there are important fiscal impacts from oil and gas (including coalbed methane) activities on school trust lands, and these have been incorporated in the Proposed RMP/Final EIS in the socioeconomic analysis in Chapter 4. The potential fiscal impacts, and the potential economic impact from loss of spending in the local economy because of SITLA oil and gas wells foregone have also been calculated for Alternative D and added to the socioeconomic analysis in Chapter 4. The comment regarding a program for land tenure adjustments between BLM and SITLA is addressed in the "Lands and Realty" section of the comments and responses.

Comment: *Utah's school trust, and the effect of that revenue loss under EPCA. The discussion of coal development and the effect, should the BLM not lease its available coal in the RPA, is also very limited.*

Response: The BLM acknowledges that there are important fiscal impacts from coal activities, and these are addressed in the Proposed RMP/Final EIS in the socioeconomic analysis in Chapter 4. The management actions in the Proposed RMP are to consider coal leasing on areas suitable. Under the Proposed RMP, the Wasatch and Emery coal fields would remain largely available. The Proposed RMP includes policies and decisions that are designed to balance extractive industries such as coal mining with needs to protect, restore, and enhance natural values. Whether additional coal development takes place

largely depends on energy prices, the relative economics of coal production in the RFO versus other regions, and site-specific environmental review.

Comment: *At the current time, approximately 73,862 surface acres are inheld in Wilderness Study Areas (WSAs) in the RPA. When these lands are added to the 88,822 acres included in the proposed non-WSA lands in the Alternative D, Utah's school trust will be left with approximately 162,684 surface acres within the RPA that cannot produce revenue or have reduced revenue potential. In this respect, the Resource Management Plan includes an unconstitutional taking of approximately 43% of the school children's lands within the RPA, and the BLM must include specific provisions in the RMP to adequately compensate the school trust, through exchanges or purchase.*

Response: The BLM acknowledges that the closure of adjoining public lands to oil and gas leasing may have a potentially negative impact on SITLA's mineral revenue. In alternatives C and D, the closure of the 379,100 acres managed as WSA or Wilderness Areas is nondiscretionary and beyond the scope of this plan.

In alternatives N, A, B, and C, there are no SITLA lands affected by discretionary closure. Chapter 4 of the Proposed RMP/Final EIS has been revised to reflect the impacts of Alternative D on SITLA inholdings for the discretionary closures of 244,058 acres of public land. It should be noted that under any alternative, the proposed ACECs are not managed as closed to mineral leasing. Areas with wilderness characteristics are recommended as closed under Alternative D.

Comment: *The section on Land Tenure Adjustments should specifically reference the need for federal acquisition of school trust lands that are captured by federal reservations and withdrawals, such as wilderness study areas, and the balancing need to provide other productive lands for the school trust to acquire. The RMP should specifically address lands more appropriately managed by the school trust and non-federal lands that could be more appropriately managed by the BLM, and identify potentially productive lands that could be used to facilitate the exchange.*

Response: In the Draft RMP/EIS, Table 2-18, pages 2-76 and 2-77, under "Common to All Alternatives for Lands and Realty" as well as Land Tenure Adjustment criteria 1 in Appendix 5 address this concern.

Comment: *Reasonable access to school trust lands, across the BLM lands, should be provided for under all alternatives. This can be done as a "Management Common to All Alternatives" notation, with a notation that access to school trust lands will be granted, even if an area is otherwise an avoidance or exclusion area for right-of-ways. Under the law, as laid out in Andrus v. Utah, the BLM is obligated to provide reasonable access to all school trust lands, including such lands located within wilderness study areas. Failure to do so would frustrate the very purpose of which Congress granted the lands.*

Response: BLM Utah IM UT 83-130 and BLM WO IM 85-579 provide access to non-federally owned land surrounded by public land managed under the authority of FLPMA. In accordance with the Cotter decision, BLM must also provide access to SITLA lands.

Comment: *Specifically, the "Planning Issues Identified" section "should include discussion and detailed reference to the issue of inheld school lands in special designation categories, particularly WSAs, ACECs, and areas to be managed for 'wilderness characteristics,' and the need to give priority to resolution of the issue."*

Response: In the Draft RMP/EIS, Table 2-18, pages 2-76 and 2-77, under "Common to All Alternatives for Lands and Realty" as well as Land Tenure Adjustment criteria 1 in Appendix 5 address this concern.

Comment: *In the Reasonably Foreseeable Development Scenario section 11, it should again be noted that BLM withdrawals and special designations directly affect development of oil and gas on school trust*

lands. The BLM should assume that, in addition to the loss of oil and gas wells on BLM lands, the school trust lands will suffer a proportionally equal loss according to the proposed special designations under each alternative. Such loss is a taking of trust resources incident to BLM's plans.

Response: The BLM acknowledges that the closure of adjoining public lands to oil and gas leasing may have a potentially negative impact on SITLA's mineral revenue. In alternatives C and D, the closure of the 379,100 acres managed as WSA or Wilderness Areas is nondiscretionary and beyond the scope of this plan.

In alternatives N, A, B, and C, there are no SITLA lands affected by discretionary closure. Chapter 4 of the Proposed RMP/Final EIS has been revised to reflect the impacts of Alternative D on SITLA inholdings for the discretionary closures of 244,058 acres of public land. It should be noted that under any alternative, the proposed ACECs are not managed as closed to mineral leasing. Areas with wilderness characteristics are recommended as closed under Alternative D.

Comment: *In the "Impacts to Physical, Biological, and cultural Resources," section 12, it should be stated that to the extent the BLM creates new areas managed for preservation, such as ACECs or areas managed for "wilderness characteristics," such designation has a direct economic impact on the Utah school trust.*

Response: The BLM acknowledges that there are important fiscal impacts from oil and gas (including coalbed methane) activities on school trust lands, and these have been incorporated in the Proposed RMP/Final EIS in the socioeconomic analysis in Chapter 4. The potential fiscal impacts, and the potential economic impact from loss of spending in the local economy because of SITLA oil and gas wells foregone have been calculated for Alternative D and added to the socioeconomic analysis in Chapter 4.

Comment: *The BLM must do an economic study of the value of the minerals in each of those areas so that the RMP clearly sets forth the economic impact of the decision to set these lands aside. Restrictive designations additionally increase the cost of access to school trust lands, they may impair marketability, and they do require the expenditure of trust resources in pursuing land exchanges with the BLM. These facts should be acknowledged appropriately in the discussion of socioeconomic impacts.*

Response: The BLM acknowledges that there are important fiscal impacts from oil and gas (including coalbed methane) activities on school trust lands, and these have been incorporated in the Proposed RMP/Final EIS in the socioeconomic analysis in Chapter 4. The potential fiscal impacts, and the potential economic impact from loss of spending in the local economy because of SITLA oil and gas wells foregone have been calculated for Alternative D and added to the socioeconomic analysis in Chapter 4.

Comment: *The BLM should re-consider whether it can impose its standards on split estate lands where it does not own the surface. This action diminishes the rights of the surface owners, whether fee or trust lands, to develop the land in the manner the owner sees fit. So long as the operator of an oil and gas well, for example, has obtained a satisfactory surface use agreement that can be included in the Application for Permit to Drill to the BLM, the BLM should not unilaterally limit mineral development.*

Response: Information regarding leasing and development on split-estate lands is found at the following Washington office website: www.blm.gov/bmp/Split_Estate.htm.

IM No. 2003-202 outlines the policy, procedures, and conditions for approving oil and gas operations on split-estate lands. In particular, the BLM will not consider an APD or a Sundry Notice administratively or technically complete until the federal lessee or its operator certifies that an agreement with the surface owner exists, or until the lessee or its operator complies with Onshore Oil and Gas Order No. 1. Compliance with Onshore Oil and Gas Order No. 1 requires the federal mineral lessee or its operator to enter into good-faith negotiations with the private surface owner to reach an agreement for the protection

of surface resources and reclamation of the disturbed areas, or payment in lieu thereof, to compensate the surface owner for loss of crops and damages to tangible improvements, if any. In addition, the BLM will invite the surface owner to participate in the onsite inspection and will take into consideration the needs of the surface owner when reviewing the APD. BLM will offer the surface owner the same level of surface protection BLM provides on federal surface (IM No. 89-201).

Comment: *The Draft RMP fails to address the impact of these closures on the economic value of the affected school trust lands in either this section or its section on socioeconomic impacts of the preferred alternative.*

Response: The BLM recognizes that under Utah v. Andrus, the state is entitled to reasonable access across public lands to school trust lands, including those located within WSAs and other areas where management prescriptions would restrict general public access. Any restrictions such as route closures within these management areas pertain to general public access. Public access to OHV routes on public lands is accomplished through travel management planning. We make a distinction between closures to the public, and state access entitlements and access needs of others that can be addressed as specific needs arise. Land tenure adjustment efforts including pending and anticipated land exchanges between the BLM and the state should properly focus on SITLA lands located within WSAs and other special management areas identified in RMPs. Therefore, the BLM does not believe it is necessary or prudent to globally grant ROWs or designated routes to school trust lands for public use. The BLM is happy to work with the state to process any FLPMA Title V ROW application the state feels is necessary to protect ingress and egress to state property. The concern about Draft RMP/EIS access restrictions other than those for general public access, such as the designation of ROW avoidance or exclusion areas, can be clarified with specific mention in the Proposed RMP/Final EIS that these designations are subject to state access entitlements under Utah v. Andrus, as described above.

Comment: *Under the Takings Clause of the United States Constitution, no road that accesses a school trust land section, within the RMP, should be closed without trustee consent. It is anticipated that SITLA would take the necessary legal action, on behalf of the beneficiary, to prevent such a closure.*

Response: The BLM recognizes that under Utah v. Andrus, the state is entitled to reasonable access across public lands to school trust lands, including those located within WSAs and other areas where management prescriptions would restrict general public access. Any restrictions such as route closures within these management areas pertain to general public access. Public access to OHV routes on public lands is accomplished through travel management planning. We make a distinction between closures to the public, and state access entitlements and access needs of others that can be addressed as specific needs arise. Land tenure adjustment efforts including pending and anticipated land exchanges between the BLM and the state should properly focus on SITLA lands located within WSAs and other special management areas identified in RMPs. Therefore, the BLM does not believe it is necessary or prudent to globally grant ROWs or designated routes to school trust lands for public use. The BLM is happy to work with the state to process any FLPMA Title V ROW application the state feels is necessary to protect ingress and egress to state property. The concern about Draft RMP/EIS access restrictions other than those for general public access, such as the designation of ROW avoidance or exclusion areas, can be clarified with specific mention in the Proposed RMP/Final EIS that these designations are subject to state access entitlements under Utah v. Andrus, as described above.

Comment: *At the very least, the Draft RMP should be amended to specifically state that: (1) Continued motorized administrative access on "non-designated" routes providing access to school trust lands will be permitted to the State of Utah, SITLA, and its permittees and grantees, notwithstanding any closure to the general public; (2) The State of Utah, SITLA, and its permittees and grantees may undertake reasonable maintenance activities to preserve and improve existing access across the BLM lands, after consultation and appropriate environmental review by the BLM; and (3) Existing routes that are the sole*

access to school trust lands will not be reclaimed without full BLM consultation with, and written approval by, SITLA, after consultation with the State Board of Education and its designated representatives.

Response: BLM Utah IM UT 83-130 and BLM WO IM 85-579 provide access to non-federally owned land surrounded by public land managed under the authority of FLPMA. In accordance with the Cotter decision, BLM must also provide access to SITLA lands.

Comment: *These alternatives have significant potential to cause loss of jobs. The document contains no economic analysis on the loss of income tax revenue to the uniform school fund, which comprises all of the State of Utah's contribution to public education.*

Response: The BLM acknowledges that there are important fiscal impacts from oil and gas (including coalbed methane) activities on school trust lands, and these have been incorporated in the Proposed RMP/Final EIS in the socioeconomic analysis in Chapter 4. The potential fiscal impacts, and the potential economic impact from loss of spending in the local economy because of SITLA oil and gas wells foregone have been calculated for Alternative D and added to the socioeconomic analysis in Chapter 4.

5.6 RECORD OF DECISION

Following publication by the EPA and BLM of an NOA of the Proposed RMP/Final EIS in the *Federal Register* and distribution of the Proposed RMP/Final EIS, a 30-day protest period runs. In addition, a 60-day Governor's Consistency Review period runs concurrently with the first half of the protest period.

The State Director will approve the Proposed RMP/Final EIS by issuing a public ROD, which is a concise document summarizing the findings and decisions brought forth from the Proposed RMP. However, approval shall be withheld on any portion of a plan being protested until final action has been completed on such protest. Before such approval is given, there shall be public notice and opportunity for public comment on any significant change made to the Proposed RMP. Among other decisions, the proposed ACEC designations and OHV categories (limitations and closures) will be approved when the ROD is signed.

5.7 DISTRIBUTION LIST

Copies of the Richfield Draft RMP/EIS were made available to the following:

Tribal Governments

- Navajo Nation
- Paiute Indian Tribe of Utah
- Uintah and Ouray Ute Indian Tribe
- Hopi Tribe

Local Governments (Counties)

- Emery County
- Garfield County
- Piute County
- Sanpete County

- Sevier County
- Wayne County

Utah State Agencies

- Governor's Office of Planning and Budget
- School and Institutional Trust Land Administration
- Utah Department of Environmental Quality
- Utah Department of Agriculture
- Utah Department of Transportation
- Utah Department of Natural Resources
- Utah State Engineer's Office
- Utah State Historic Preservation Office
- Utah State Legislature, Government Affairs Committee

Members of Congress

- Senator Orrin Hatch
- Senator Robert Bennett
- Representative Jim Matheson
- Representative Rob Bishop
- Representative Chris Cannon

Department of the Interior Agencies

- National Park Service
  - Capitol Reef National Park
  - Glen Canyon National Recreation Area
  - Canyonlands National Park
- Office of Environmental Policy and Compliance
- U.S. Fish and Wildlife Service
- U.S. Geological Survey

Department of Agriculture Agencies

- U.S. Department of Agriculture Forest Service
  - Intermountain Regional Office
  - Dixie National Forest
  - Fishlake National Forest
  - Manti-LaSal National Forest
- Natural Resources Conservation Service

Other Non-DOI Federal Agencies

- Environmental Protection Agency
- Federal Highway Administration
- U.S. Army Corps of Engineers
- Department of Energy

5.8 LIST OF PREPARERS

As required by NEPA regulations (40 CFR § 1502.17), Table 5-14 lists the people responsible for preparing this Proposed RMP/Final EIS.

Table 5-14. List of Preparers

Name	Education/Experience	Resource Specialty
Bureau of Land Management		
Stan Adams	BS, Range Science	Recreation, OHV, Hazardous Materials
Jason Anderson	BS, Geography	GIS Analysis
Lori Armstrong	BS, Botany	Former Associate Field Manager
Dona Bastian	BLM experience, 15 years	Wild Horses and Burros
Doug Bauer	BS, Geology	Minerals
Ron Bolander	BS, MS, Botany	Special Status Species
Sandra Borthwick	BS, in Wildlife Science MS, in Wildlife Biology	Fish and Wildlife, Special Status Species
Laurie Bryant	BLM experience, 30 years	Paleontology
Lisa Bryant	BS, Agriculture and Soils MS, Soil Science	Air, Soils, Watershed, Invasive Species
Susan Caplan	BS, Meteorology MS, Watershed Science	Air Quality
Douglas Cook	BA, History and Journalism BS, Petroleum Geology and Mathematics	Fluid Minerals
Linda Chappell	BS, Range Management BS, Forest Management	Wildland Fire Management
Cornell Christensen	BS, Range Management	Field Manager
Lorraine Christian	BS, Wildlife and Fisheries Biology	WO Planner; Project Oversight
Vearl Christiansen	BS, Range Science	Vegetation, Livestock Grazing
Chris Colton	BS, Range Management	Wildland Fire Management, Livestock Grazing, Vegetation
Michael Dekeyrel	BS, Wildlife and Range Management	Lands and Realty
Nancy DeMille	BLM experience, 17 years	Lands and Realty
Frank Erickson	BS, Journalism	Project Management, Wild and Scenic Rivers, ACECs, Wilderness Characteristics
Robin Fehlau	BS, Physical Geography MS, Outdoor Recreation	Recreation, OHV

Name	Education/Experience	Resource Specialty
Timothy Finger	BS, Zoology BS, Wildlife Management	Recreation, Wilderness Study Areas, Wild and Scenic Rivers, ACECs, Wilderness Characteristics
Sue Fivecoat	BLM experience, 16 years	VRM, Forestry and Woodland Products, Recreation, Wild and Scenic Rivers, Travel Management
Suzanne Grayson	BS, Environmental Science	Fish and Wildlife
Larry Greenwood	BS, Wildlife MS, Botany/Range	Soil, Water and Riparian, Fish and Wildlife, Special Status Species
Gary Hall	BS, Range Management	ACEC Sub-team Leader, VRM, Recreation, OHV, Lands and Realty, Minerals, Wilderness Study Areas
Brant Hallows	BS, Range Management Masters Natural Resources	Soil, Water and Riparian
Craig Harmon	BA, Anthropology and Archaeology MA, Anthropology and Archaeology	Cultural Resources
Bert Hart	BS, Range Management	Assistant Planner, Travel Management
Gregg Hudson	BS, Geology	Minerals
Michael Jackson	BS, Geology MS, Geology	Minerals, Paleontology
Chris Keefe	BS, Wildlife Biology and Fisheries Management	Special Status Species, Biological Assessment, Technical Review
Margaret Kelsey	BS, Natural Resource Management	Wilderness, ACECs, Wild and Scenic Rivers
Steve Knox	BS, Watershed Management, Forestry option	State Planner; Document Reviewer
Larry Lichthardt	BS, Range Management	Livestock Grazing
Steve Madsen	BS, Wildlife and Fisheries Sciences	Wildlife, Raptors, and Migratory Birds
Jeanette Matovich	MA, Anthropology	Document Reviewer
Tom Mendenhall	BS, Fisheries Science	Fish
Dave Mermejo	BS, Recreation	Wilderness, Wilderness Characteristics
Lauren Mermejo	BS, Zoology Graduate Certificate, Environmental Impact Studies	Wilderness Characteristics
Doug Page	MS, Forestry	Forestry and Woodland Products
Jolie Pollet	BA, Geography MS, Forestry and Fire Science	Wildland Fire Management
Garth Portillo	BS, Anthropology	Cultural Resources

Name	Education/Experience	Resource Specialty
Buzz Rakow	BS, Earth Science	Minerals
John Russell	MS, Social Sciences BS, Outdoor Recreation AS, Natural Resources	Planning Specialist
Justin Seastrand	BS, Geography	GIS Analysis
Leroy Smalley	BS, Zoology and Chemistry	Vegetation, Livestock Grazing
Bill Stevens	Ph.D. Socioeconomics	Socioeconomics
Gus Warr	BS, Range Science	Wild Horses and Burros
Wayne Wetzel	BS, Earth Science MS, PhD, Geography	Associate Field Manager
Burke Williams	BS, Wildlife Science	Vegetation, Livestock Grazing, OHV
Phil Zieg	BS, Range and Forest Management	Air Quality, Soil, Water and Riparian
Booz Allen and Hamilton		
Erik Anderson	BS, Civil and Environmental Engineering MAS, (In progress) Environmental Policy and Management	Project Management, Soil, Water and Riparian, Minerals
Gary Armstrong	BA, Political Science MA, Public Policy Analysis	Project Management, Wild and Scenic Rivers, ACECs
Quincy Bahr	BS, Natural Resources Management and Planning MS, (In progress) Natural Resources Management and Planning	Cultural Resources, Paleontology, Wild Horses and Burros, Wildland Fire Management, Livestock Grazing, Wilderness Study Areas
Sean Dougherty	BS, Geography	GIS Analysis
Michael Ghazizadeh	BS, Geology MS, Geology MS, Natural Science PhD, Geology	Minerals
Melanie Martin	BS, Agriculture (Environmental Protection major) MEPM, Natural Resource Management	NEPA Support, Technical Reviewer, Special Status Species, ACECs, Cumulative Impacts Analysis
Jim May	A.B, Zoology MS, Water Resources Management	Technical Reviewer
Lisa McDonald	BS, Earth Science MS, Mineral Economics PhD, Mineral Economics	Socioeconomics
Pamela Middleton	MAS, Environmental Policy and Management	NEPA Support, Technical Reviewer

Name	Education/Experience	Resource Specialty
Dan Morse	BS, Natural Resource Recreation MS, Forestry	VRM, Wildland Fire Management, Forestry and Woodland Products, Recreation, Wilderness Study Areas
Al Pierson	BS, Wildlife Science	Public Lands Advisor
Richard Pinkham	BA, Geography MS, Natural Resource Policy and Management	Socioeconomics
Dana Purrone	BA, Environmental Policy BA, Spanish Pursuing MS, Environmental Policy and Natural Resource Management	Fish and Wildlife
Warner Reeser	BA, Mathematics MS, Atmospheric Science PhD, Earth Resources	Air Quality
Mike Sumner	BS, Recreation Resource Management	Document Coordination, VRM, Transportation and Access, Glossary, Acronym List, Preparer's List, Appendices
Lloyd Tabing	BS, Natural Resource Management BS, Urban Planning MS, Natural Resource Management	Air Quality, Wild and Scenic Rivers, Cumulative Impacts Analysis
Jeff Ward	BS, Natural Resource Planning and Management	VRM, Recreation, OHV, ACECs
Leslie Watson	BS, Zoology	Vegetation, Special Status Species, Livestock Grazing
Dave Wegner	BS, Aquatic Science MS, Environmental Engineering	Vegetation, Special Status Species, Fish and Wildlife
Caitlin Willoughby	BA, Geology (Environmental Science, minor) GIS Certification and Coastal Zone Management Certification MLS, Library and Informational Science GIS Certification	GIS Analyst
Rocky Mountain Environmental Consultants		
Megan Robinson	BS, Biology, Chemistry, and Zoology	Biological Assessment and Threatened, Endangered, and Special Status Species
SAGE Environmental, LLC		
Joelle Dickson	BS, Recreation Management	Document Editing and Formatting
Laurie Goldner	BS, Zoology PhD, Zoology	Document Editing

Name	Education/Experience	Resource Specialty
John Rezac	BS, Earth Science Professional Geologist	Document Editing
Steve Torpey	BS, Geology	Document Editing

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Richfield Field Office
Proposed Resource Management Plan & Final Environmental Impact Statement

Volume 3 of 3

BUREAU OF LAND MANAGEMENT | UTAH

Richfield Field Office

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

August 2008

BLM Mission

To sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

BLM-UT-PL-08-004-1610
UT-050-2007-090 EIS
FES 08-25

United States Department of the Interior
BUREAU OF LAND MANAGEMENT

Utah State Office
P.O. Box 45155
Salt Lake City, UT 84145-0155
http://www.blm.gov

IN REPLY REFER TO:

UT-050-1610-012J

Dear Reader:

Enclosed is the Proposed Resource Management Plan (PRMP) and Final Environmental Impact Statement (FEIS) for the Richfield Field Office. The Bureau of Land Management (BLM) prepared the PRMP/FEIS in consultation with cooperating agencies, taking into account public comments received during this planning effort. This PRMP/FEIS provides a framework for the future management direction and appropriate use of BLM-administered lands and resources located in Sanpete, Sevier, Piute, Wayne, and Garfield counties, Utah. The document contains both land use planning decisions and implementation decisions to guide the BLM's management of the Richfield Field Office. The PRMP/FEIS is open for a 30-day review and protest period beginning the date the U.S. Environmental Protection Agency (EPA) publishes the Notice of Availability of the FEIS in the *Federal Register*.

This PRMP/FEIS has been developed in accordance with the National Environmental Policy Act of 1969 (NEPA) and the Federal Land Policy and Management Act of 1976 (FLPMA). The PRMP/FEIS is largely based on Alternative B, the Preferred Alternative in the Draft RMP and EIS, which was released in October 2007. This PRMP/FEIS contains the proposed plan and potential impacts of the proposed plan. The alternatives presented in the Draft RMP/EIS are also provided for comparative purposes. Major comments received during the public review period of the Draft RMP/EIS and responses to these comments are provided on an attached CD. To aid the reader, substantive changes made between the Draft RMP/EIS and the PRMP/FEIS are described in Chapter 1 and are detailed in Appendix 20.

Pursuant to BLM's planning regulations at 43 CFR 1610.5-2, any person who participated in the planning process for this PRMP and has an interest which is or may be adversely affected by the planning decisions may protest approval of the planning decisions within 30 days from date the Environmental Protection Agency publishes the Notice of Availability in the *Federal Register*. For further information on filing a protest, please see the accompanying protest regulations in the pages that follow (labeled as Attachment 1). The regulations specify the required elements of your protest. Take care to document all relevant facts. As much as possible, reference or cite the planning documents or available planning records (e.g. meeting minutes or summaries, correspondence, etc.). To aid in ensuring the completeness of your protest, a protest check list is attached to this letter (labeled as Attachment 2). If your protest does not include all of the elements outlined in 43 CFR 1610.5-2 the BLM will not respond to your protest.

E-mailed and faxed protests will not be accepted as valid protests unless the protesting party also provides the original letter by either regular or overnight mail postmarked by the close of the protest period.

Under these conditions, the BLM will consider the e-mailed or faxed protest as an advance copy and will afford it full consideration. If you wish to provide the BLM with such advance notification, please direct faxed protests to the attention of Brenda Hudgens-Williams- BLM protest coordinator at 202-452-5112, and e-mailed protests to: Brenda_Hudgens-Williams@blm.gov.

All protests, including the follow-up letter (if e-mailing or faxing) must be in writing and mailed to the following address:

Regular Mail:	Overnight Mail:
Director (210)	Director (210)
Attention: Brenda Williams	Attention: Brenda Williams
P.O. Box 66538	1620 L Street, N.W., Suite 1075
Washington, D.C. 20035	Washington, D.C. 20036

Before including your address, phone number, e-mail address, or other personal identifying information in your protest, be advised that your entire protest – including your personal identifying information – may be made publicly available at any time. While you can ask us in your protest to withhold from public review your personal identifying information, we cannot guarantee that we will be able to do so.

The BLM Director will make every attempt to promptly render a decision on each protest. The decision will be in writing and will be sent to the protesting party by certified mail, return receipt requested. The decision of the BLM Director shall be the final decision of the Department of the Interior.

Upon resolution of all land use plan protests, the BLM will issue an Approved RMP and Record of Decision (ROD). The Approved RMP and ROD will be mailed or made available electronically to all who participated in the planning process and will be available to all parties through the "Planning" page of the BLM national website (*http://www.blm.gov/planning*), or by mail upon request.

Unlike land use planning decisions, implementation decisions are not subject to protest under the BLM planning regulations, but are subject to an administrative review process, through appeals to the Office of Hearings and Appeals (OHA), Interior Board of Land Appeals (IBLA) pursuant to 43 CFR, Part 4 Subpart E. Implementation decisions generally constitute the BLM's final approval allowing on-the ground actions to proceed. Where implementation decisions are made as part of the land use planning process, they are still subject to the appeals process or other administrative review as prescribed by specific resource program regulations once the BLM resolves the protests to land use planning decisions and issues an Approved RMP and ROD. Implementation-level decisions in the PRMP/FEIS are indicated by *italic text* and an asterisk (*) in Chapter 2. The Approved RMP and ROD will also clearly identify the implementation decisions made in the plan that may be appealed to the Office of Hearing and Appeals.

Sincerely,

Selma Sierra
Utah State Director

Attachment 1

[Code of Federal Regulations]
[Title 43, Volume 2]
[Revised as of October 1, 2002]
From the U.S. Government Printing Office via GPO Access
[CITE: 43CFR1610.5-2]

TITLE 43--PUBLIC LANDS: INTERIOR

CHAPTER II--BUREAU OF LAND MANAGEMENT, DEPARTMENT OF THE INTERIOR

PART 1600--PLANNING, PROGRAMMING, BUDGETING--Table of Contents

Subpart 1610--Resource Management Planning

Sec. 1610.5-2 Protest procedures.

(a) Any person who participated in the planning process and has an interest which is or may be adversely affected by the approval or amendment of a resource management plan may protest such approval or amendment. A protest may raise only those issues which were submitted for the record during the planning process.

(1) The protest shall be in writing and shall be filed with the Director. The protest shall be filed within 30 days of the date the Environmental Protection Agency published the notice of receipt of the final environmental impact statement containing the plan or amendment in the Federal Register. For an amendment not requiring the preparation of an environmental impact statement, the protest shall be filed within 30 days of the publication of the notice of its effective date.

(2) The protest shall contain:

(i) The name, mailing address, telephone number and interest of the person filing the protest;

(ii) A statement of the issue or issues being protested;

(iii) A statement of the part or parts of the plan or amendment being protested;

(iv) A copy of all documents addressing the issue or issues that were submitted during the planning process by the protesting party or an indication of the date the issue or issues were discussed for the record; and

(v) A concise statement explaining why the State Director's decision is believed to be wrong.

(3) The Director shall promptly render a decision on the protest. The decision shall be in writing and shall set forth the reasons for the decision. The decision shall be sent to the protesting party by certified mail, return receipt requested.

(b) The decision of the Director shall be the final decision of the Department of the Interior.

Attachment 2

Resource Management Plan Protest
Critical Item Checklist

The following items *must* be included to constitute a valid protest whether using this optional format, or a narrative letter.
(43 CFR 1610.5-2)

Before including your address, phone number, e-mail address, or other personal identifying information in your **protest**, be advised that your entire **protest**--including your personal identifying information--may be made publicly available at any time. While you can ask us in your **protest** to withhold from public review your personal identifying information, we cannot guarantee that we will be able to do so. All submissions from organizations and businesses, and from individuals identifying themselves as representatives or officials of organizations and businesses, will be available for public inspection in their entirety.

Resource Management Plan (RMP) or Amendment (RMPA) being protested:

Name:
Address:
Phone Number: ( )

Your interest in filing this protest (how will you be adversely affected by the approval or amendment of this plan?):

Issue or issues being protested:

Statement of the part or parts of the plan being protested:

Chapter:
Section:
Page:
(or) Map:

Attach copies of all documents addressing the issue(s) that were submitted during the planning process by the protesting party, <u>OR an indication of the date the issue(s) were discussed for the record</u>.
Date(s):

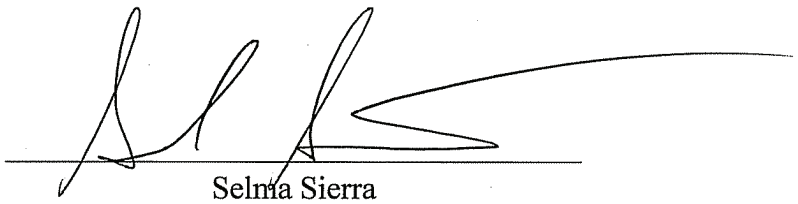
A concise statement explaining why the State Director's decisions is believed to be wrong:

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

THE RICHFIELD FIELD OFFICE PROPOSED RESOURCE MANAGEMENT PLAN AND FINAL ENVIRONMENTAL IMPACT STATEMENT

Bureau of Land Management
Utah State Office
Salt Lake City, Utah

Prepared by the
Richfield Field Office
August 2008



Selma Sierra
Utah State Director

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Richfield Field Office Planning Area
Proposed Resource Management Plan and Final Environmental Impact Statement

Lead Agency: U.S. Department of the Interior, Bureau of Land Management
Type of Action: Final, Administrative
Jurisdiction: Comprising all of Sanpete, Sevier, Wayne, Piute, and portions of Garfield and Kane Counties, Utah.

Abstract: The Richfield Proposed Resource Management Plan and Final Environmental Impact Statement (PRMP/FEIS) describes and analyzes the Proposed RMP and other alternatives presented in the Draft RMP and EIS (DRMP/DEIS) for the planning and management of public lands and resources administered by the Bureau of Land Management (BLM), Richfield Field Office in Utah. The Proposed RMP is open for a 30-day review and protest period beginning, August 8, 2008, the date the U.S. Environmental Protection Agency (EPA) publishes the Notice of Availability (NOA) of the Final EIS in the Federal Register.

The Proposed RMP was crafted primarily from the Preferred Alternative presented in the DRMP/DEIS (Alternative B) and includes other decisions within the range of alternatives (Alternatives N, A, C, and D) in response to public comments and internal review. The No Action Alternative (Alternative N) reflects current management. The BLM has removed the DRMP/DEIS Alternative B (Preferred Alternative) from the PRMP/FEIS. The other DRMP/DEIS Alternatives (Alternatives N, A, C, and D) and analyses are carried forward in the PRMP/FEIS only for comparative purposes and to correct some mistakes that were identified during the public comment period.

Protest: Protests must be postmarked or received no later than 30 days after publication of the NOA by the EPA in the *Federal Register*. The 30-day protest period (identified above) will not be extended. Refer to the instructions in the dear reader letter for additional information on how to protest. The close of the protest period will be announced in news releases, newsletters, and on the Richfield RMP website at http://www.blm.gov/ut/st/en/fo/richfield/planning.html.

For Further Information Contact:
Bureau of Land Management, Richfield Field Office
Attn: John Russell, RMP Project Manager
150 East 900 North
Richfield, Utah 84701
Telephone (435) 896-1500

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APPENDICES

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GLOSSARY

ACQUISITION. The Bureau of Land Management (BLM) acquires land, easements, and other real property rights when it is in the public interest and consistent with approved land use plans (LUP). The BLM's land acquisition program is designed to (1) improve management of natural resources through consolidation of federal, state, and private lands; (2) increase recreational opportunities, preserve open space, and/or ensure accessibility of public land; (3) secure key property necessary to protect endangered species and promote biological diversity; (4) preserve archaeological and historical resources; and (5) implement specific acquisitions authorized by Acts of Congress.

ACTIVE USE. Livestock grazing term meaning the current authorized use, including livestock grazing and conservation use. Active use may constitute a portion, or all, of permitted use. Active use does not include temporary non-use or suspended use of forage within all or a portion of an allotment. (43 *Code of Federal Regulations* [CFR] 4100.0-5)

ACTIVITY PLAN. A type of implementation plan (see *Implementation Plan*); an activity plan usually describes multiple projects and applies best management practices to meet LUP objectives. Examples of activity plans include interdisciplinary management plans, habitat management plans (HMP), recreation area management plans, and allotment management plans (AMP). (H-1601-1, *BLM Land Use Planning Handbook*)

ACTUAL USE. Livestock grazing term meaning where, how many, what kind or class of livestock, and how long livestock graze on an allotment, or on a portion or pasture of an allotment. (43 CFR 4100.0-5)

ADMINISTRATIVE USE. Official use related to management and resources of the public lands by federal, state, or local governments or nonofficial use sanctioned by an appropriate authorization instrument, such as right-of-way (ROW), permit, lease, or maintenance agreement.

ADMINISTRATIVE PURPOSES. Administrative use functions involving regular maintenance or operation of facilities or programs.

AIR QUALITY. A measure of the health-related and visual characteristics of the air, often derived from quantitative measurements of the concentrations of specific injurious or contaminating substances. Refers to standards for various classes of land as designated by the Air Pollution Control Act of 1955; Clean Air Act of 1963, as amended; and Air Quality Act of 1967.

ALLOTMENT. An area of land designated and managed for livestock grazing. (43 CFR § 4100.0-5) (H-4180-1, *Standards for Rangeland Health*)

ALLOTMENT MANAGEMENT PLAN (AMP). A document prepared in consultation with the grazing lessees or permittees involved, which applies to livestock operations on the public lands and which (1) prescribes the manner in, and extent to, which livestock operations will be conducted in order to meet the multiple-use, sustained-yield, economic and other needs and objectives as determined for the lands by the Secretary concerned; and (2) describes the type, location, ownership, and general specifications for the range improvements to be installed and maintained on the lands to meet the livestock grazing and other objectives of land management; and (3) contains such other provisions relating to livestock grazing and other objectives found by the Secretary concerned to be consistent with the provisions of this Act and other applicable law (from Federal Lands Policy and Management Act [of 1976] [FLPMA], Title 43 Chapter 35, Subchapter I 1702[k]).

AMENDMENT. The process for considering or making changes in the terms, conditions, and decisions of approved resource management plans (RMP) or management framework plans (MFP). Usually only one or two issues are considered that involve only a portion of the planning area. (H-1601-1, *BLM Land Use Planning Handbook*)

ANIMAL UNIT MONTH (AUM). The amount of forage necessary for the sustenance of one cow or its equivalent for a 1-month period. (43 CFR 4100.0-5)

APPROPRIATE MANAGEMENT RESPONSE (AMR). Any specific action suitable for meeting Fire Management Unit (FMU) objectives. Typically, the AMR ranges across a spectrum of tactical options (from monitoring to intensive management actions). The AMR is developed by using FMU strategies and objectives that the Fire Management Plan identifies.

AREAS OF CRITICAL ENVIRONMENTAL CONCERN (ACEC). Areas within the public lands in which special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards. (FLPMA Section 103 (a))

ASSESSMENT. The act of evaluating and interpreting data and information for a defined purpose (H-1601-1, *BLM Land Use Planning Handbook*).

ATTAINMENT AREA. A geographic area in which criteria air pollutant levels meet the health-based primary standard (national ambient air quality standard (NAAQS) for the pollutant. An area may have on acceptable level for one criteria air pollutant but may have unacceptable levels for others. Thus, an area could be attainment and nonattainment simultaneously. Attainment areas are defined using federal pollutant limits set by EPA.

AUTHORIZED OFFICER. The federal employee who has the delegated authority to make a specific decision.

AVOIDANCE AREA. Areas determined to be less suitable for an ROW because of (1) important and/or valued resources or resources assigned a special status, or (2) a substantive potential conflict with use. These areas exhibit constraints to siting facilities and are less desirable for a ROW but could be mitigated to reduce potential effects the ROW might have on the environment.

BACK COUNTRY BYWAYS. Vehicle routes that traverse scenic corridors using secondary or back-country road systems. National back-country byways are designated by the type of road and vehicle needed to travel the byway.

BEST MANAGEMENT PRACTICES (BMP). A suite of techniques that guide, or may be applied to, management actions to aid in achieving desired outcomes. Best management practices are often developed in conjunction with LUPs, but they are not considered a LUP decision unless the LUP specifies that they are mandatory. They may be updated or modified without a plan amendment if they are not mandatory. (H-1601-1, *BLM Land Use Planning Handbook*).

BIG GAME. Indigenous ungulate wildlife species that are hunted (e.g., elk, deer, bison, bighorn sheep, and pronghorn antelope).

BIOLOGICAL ASSESSMENT (BA). The document prepared by or under the direction of BLM concerning listed and proposed species and designated and proposed critical habitat that may be present

in the action area and contains the BLM's determination of potential effects of the action on such species and habitat. Biological assessments are required for formal consultations and conferences on "major construction projects." They are recommended for all formal consultations and formal conferences and many informal consultations where a written evaluation of the effects of an action on listed or proposed species and on designated or proposed critical habitat is needed. (M-6840, *Special Status Species Manual*).

BIOLOGICAL OPINION (BO). The document which includes: (1) the opinion of the FWS and/or National Marine Fisheries Service (NMFS) as to whether or not a federal action is likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of designated critical habitat, (2) a summary of the information on which the opinion is based, and (3) a detailed discussion of the effects of the action on listed species or designated critical habitat. Depending upon the determination of jeopardy or non-jeopardy, the BO may contain reasonable and prudent alternatives, a statement of anticipated take of listed animals, and conservation recommendations for listed plants. (M-6840, *Special Status Species Manual*).

CANDIDATE SPECIES. Taxa for which the U.S. Fish and Wildlife Service (USFWS) has sufficient information on its status and threats to support proposing the species for listing as endangered or threatened under the Endangered Species Act of 1973 (ESA) but for which issuance of a proposed rule is currently precluded by higher priority listing actions. (M6840, *Special Status Species Manual*) (M6840, *Special Status Species Manual*).

CASUAL USE. Means activities that involve practices that do not ordinarily cause any appreciable disturbance or damage to the public lands, resources, or improvements and, therefore, do not require a ROW grant or temporary use permit (43 CFR 2800). Also means any short-term noncommercial activity that does not cause appreciable damage or disturbance to the public lands, their resources, or improvements and that is not prohibited by closure of the lands to such activities. (43 CFR 2920)

CLOSED. Generally denotes that an area is not available for a particular use or uses. For example, 43 CFR 8340.0-5 sets forth the specific meaning of "closed" as it relates to off-highway vehicle (OHV) use, and 43 CFR 8364 defines "closed" as it relates to closure and restriction orders. (H-1601-1, *BLM Land Use Planning Handbook*)

***CODE OF FEDERAL REGULATIONS* (CFR).** The official, legal tabulation or regulations directing Federal Government activities. (*BLM National Management Strategy for OHV Use on Public Lands*)

COLLABORATION. A cooperative process in which interested parties, often with widely varied interests, work together to seek solutions with broad support for managing public and other lands. (H-1601-1, *BLM Land Use Planning Handbook*)

CONDITION CLASS (Fire Regimes). Fire Regime Condition Classes are a measure describing the degree of departure from historical fire regimes, possibly resulting in alterations of key ecosystem components such as species composition, structural stage, stand age, canopy closure, and fuel loadings. One or more of the following activities might have caused this departure: fire suppression, timber harvesting, livestock grazing, introduction and establishment of exotic plant species, introduced insects or disease, or other management activities.

CONDITION CLASS 1. Fire regimes are within a historical range, and the risk of losing key ecosystem components from fire is low. Vegetation attributes (species composition and structure) are intact and functioning within an historical range.

CONDITION CLASS 2. Fire regimes have been moderately altered from their historical range. The risk of losing key ecosystem components from fire is moderate. Fire frequencies have departed from historical frequencies by one or more return intervals (increased or decreased). This results in moderate changes to one or more of the following: fire size, frequency, intensity, severity, and landscape patterns. Vegetation attributes have been moderately altered from their historical range.

CONDITION CLASS 3. Fire regimes have been altered significantly from their historical ranges. The risk of losing key ecosystem components from fire is high. Fire frequencies have departed from historical frequencies by multiple return intervals. This action results in dramatic changes to one or more of the following: fire size, frequency, intensity, severity, and landscape patterns. Vegetation attributes have been altered significantly from their historical range.

CONFORMANCE. Means that a proposed action shall be specifically provided for in the LUP or, if not specifically mentioned, shall be clearly consistent with the goals, objectives, or standards of the approved LUP. (H-1601-1, *BLM Land Use Planning Handbook*)

CONSERVATION AGREEMENT. A formal written document agreed to by USFWS and/or NMFS and another federal agency, state agency, local government, or the private sector to achieve the conservation of candidate species or other special status species (SSS) through voluntary cooperation. It documents the specific actions and responsibilities for which each party agrees to be accountable. The objective of a conservation agreement is to reduce threats to a SSS or its habitat. An effective conservation agreement may lower species' listing priority or eliminate the need for listing. (M6840, *Special Status Species Manual*)

COOPERATING AGENCY. The Council on Environmental Quality (CEQ) regulations implementing National Environmental Policy Act (NEPA) define a cooperating agency as any agency that has jurisdiction by law or special expertise for proposals covered by NEPA (40 CFR 1501.6). Any federal, state, or local government jurisdiction with such qualifications may become a cooperating agency by agreement with the lead agency. (H-1601-1, *BLM Land Use Planning Handbook*)

CRITICAL HABITAT. (1) The specific areas within the geographical area currently occupied by a species, at the time it is listed in accordance with the ESA, on which are found those physical or biological features (i) essential to the conservation of the species and (ii) that may require special management considerations or protection, and (2) specific areas outside the geographical area occupied by a species at the time it is listed on determination by the USFWS and/or NMFS that such areas are essential for the conservation of the species. Critical habitats are designated in 50 CFR Parts 17 and 226. The constituent elements of critical habitat are those physical and biological features of designated or proposed critical habitat essential to the conservation of the species, including, but not limited to: (1) space for individual and population growth, and for normal behavior; (2) food, water, air, light, minerals, or other nutritional or physiological requirements; (3) cover or shelter; (4) sites for breeding, reproduction, rearing of offspring, germination, or seed dispersal; and (5) habitats that are protected from disturbance or are representative of the historic geographic and ecological distributions of a species. (M6840, *Special Status Species Manual*)

CRUCIAL VALUE HABITAT. Any particular range or habitat component that directly limits a community, population, or subpopulation to reproduce and maintain itself at a certain level over the long-term. Those sensitive use areas that, because of limited abundance and/or unique qualities, constitute irreplaceable critical requirements for high interest wildlife. This may also include highly sensitive habitats, including fragile soils that have little or no reclamation potential. Restoration or replacement of these habitats may not be possible. Examples include the most crucial (critical) summer and/or winter range or concentration areas; critical movement corridors; breeding and rearing

complexes; spawning areas; developed wetlands; Class 1 and 2 streams, lake, ponds or reservoirs; and riparian habitats critical to high interest wildlife. (Utah Division of Wildlife Resources)

CRYPTOBIOTIC CRUSTS. A biological community that forms a surface layer or crust on some soils. Generally includes algae, microfungi, mosses, lichens, and bacteria. Important in soil protection and nutrient supply. (*Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah*)

CULTURAL RESOURCES OR CULTURAL PROPERTY. A definite location of human activity, occupation, or use identifiable through field inventory (survey), historical documentation, or oral evidence. The term includes archaeological, historic, or architectural sites, structures, or places with important public and scientific uses and may include definite locations (sites or places) of traditional cultural or religious importance to specified social and/or cultural groups. (Cf. "traditional lifeway value"; see "definite location.") Cultural resources are concrete, material places and things that are located, classified, ranked, and managed through the system of identifying, protecting, and utilizing for public benefit described in this Manual series. (M-8100-1, *BLM Cultural Resources Management*)

CULTURAL RESOURCE INVENTORY CLASSES. Class I—existing data inventory. A study of published and unpublished documents, records, files, registers, and other sources, resulting in analysis and synthesis of all reasonably available data. Class I inventories encompass prehistoric, historic, and ethnological/sociological elements and are in large part chronicles of past land uses. They may have major relevance to current land use decisions. 2. Class II—sampling field inventory. A statistically based sample survey designed to help characterize the probable density, diversity, and distribution of archaeological properties in a large area by interpreting the results of surveying limited and discontinuous portions of the target area. 3. Class III—intensive field inventory. A continuous, intensive survey of an entire target area, aimed at locating and recording all archaeological properties that have surface indications, by walking close-interval parallel transects until the area has been thoroughly examined. Class III methods vary geographically, conforming to the prevailing standards for the region involved. (M-8100-1, *BLM Cultural Resources Management*)

CUMULATIVE IMPACT. The impact on the environment resulting from the impact of one action added to other past, present, and reasonable foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over time. (H-1790-1, *BLM NEPA Handbook*)

DENDROGLYPH. Refers to a tree with historic or prehistoric designs, often geometric, cut into the bark.

DESIGNATED ROADS AND TRAILS. Specific roads and trails identified by the BLM where some type of motorized vehicle use is appropriate and allowed either seasonally or year long. (H-1601-1, *BLM Land Use Planning Handbook*)

DESIRED CONDITION. Description of those factors that should exist within ecosystems to maintain their survival and to meet social and economic needs.

DISPERSED RECREATION. Recreation activities of an unstructured type that are not confined to specific locations or dependent on recreation sites. Example of these activities may be hunting, fishing, off-road vehicle use, hiking, and sightseeing.

DISPOSAL. Transfer of public land out of federal ownership to another party through sale, exchange, Recreation and Public Purposes Act, Desert Land Entry, or other land law statutes.

EASEMENT. An interest in land entitling the owner or holder, as a matter or right, to enter upon land owned by another party for a particular purpose.

ECOLOGICAL SITE. A kind of land with a specific potential natural community and specific physical site characteristics, differing from other kinds of land in their ability to produce distinctive kinds and amounts of vegetation and to respond to management. Ecological sites are defined and described with information about soil, species composition, and annual production. (BLM 2001a)

ECOLOGICAL SITE DESCRIPTION. Description of the soils, uses, and potential of a kind of land with specific physical characteristics to produce distinctive kinds and amounts of vegetation. (*Interpreting Indicators of Rangeland Health*)

ECOSYSTEM. Organisms together with their abiotic environment, forming an interacting system, inhabiting an identifiable space. (Society for Range Management)

ELIGIBLE RIVER. A river or river segment found eligible for inclusion into the National Wild and Scenic Rivers System through the determination that it is free-flowing and, with its adjacent land area, possesses one or more river-related outstandingly remarkable values. (Wild and Scenic Rivers Act)

ENDANGERED SPECIES. Any species that is in danger of extinction throughout all or a significant portion of its range. (Endangered Species Act of 1973)

ENVIRONMENTAL ASSESSMENT (EA). A concise public document for which a federal agency is responsible that serves to (1) briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact, (2) aid an agency's compliance with the NEPA when no environmental impact statement is necessary, and (3) facilitate preparation of an environmental impact statement when one is necessary. (40 CFR 1508.9)

ENVIRONMENTAL IMPACT STATEMENT (EIS). A detailed written statement as required by Section 102 (2) of the NEPA, which states that all agencies of the Federal Government shall include in every…major federal action significantly affecting the quality of the environment, a detailed statement prepared by the responsible official on (1) the environmental impacts of the proposed action, (2) any adverse environmental effects that cannot be avoided should the proposal be implemented, (3) alternatives to the proposed action, (4) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and (5) any irreversible and irretrievable commitments of resources that would be involved in the proposed action, should it be implemented. (40 CFR 1508.11 and the NEPA of 1969)

EPHEMERAL STREAM. A stream that flows only in direct response to precipitation, and whose channel is at all times above the water table. Generally, ephemeral streams do not flow continuously for more than 30 days and have more robust upland vegetation than found outside the ephemeral riparian wetland area.

EXCLUSION AREA. Areas determined unsuitable for a ROW because of (1) unique, highly valued, complex, or legally protected resources; (2) potentially significant environmental impact resulting from conflict with current land uses; or (3) areas posing substantial hazard to construction and/or operation of a linear facility (e.g., electric transmission line, pipeline, telephone line, fiber optic line). In these areas, ROWs would be granted only in cases where there is a legal requirement to provide such access.

EXECUTIVE ORDER. A presidential directive with the force of law. It does not need congressional approval. The Supreme Court has upheld executive orders as valid either under the general constitutional grant of executive powers to the President or if authority for it was expressly granted to the President by the Congress. Congress can repeal or modify an executive order by passing a new law; however, it must be signed by the President or his veto overridden.

EXTENSIVE RECREATION MANAGEMENT AREA (ERMA). A public lands unit identified in LUPs containing all acreage not identified as an SRMA. Recreation management actions within an ERMA are limited to only those of a custodial nature.

FEDERAL LANDS. As used in this document, lands owned by the United States, without reference to how the lands were acquired or what federal agency administers the lands. The term includes mineral estates and coal estates underlying private surface but excludes lands held by the United States in trust for Indians, Aleuts, or Eskimos. (See also Public Land.)

FEDERAL LANDS POLICY AND MANAGEMENT ACT (FLPMA) (OF 1976). Public law 94-579. An Act to establish public land policy; to establish guidelines for its administration; to provide for the management, protection, development, and enhancement of the public lands; and for other purposes.

FEDERAL REGISTER. A daily publication that reports Presidential and federal agency documents. (BLM National Management Strategy for OHV Use on Public Lands)

FIRE MANAGEMENT PLAN. Strategic implementation-level plans that define a program to manage wildland fires, fuel reduction, and fire rehabilitation based on an area's approved RMP. Fire management plans must address a full range of fire management activities that support ecosystem sustainability, values to be protected, protection of firefighter and public safety, and public health and environmental issues and must be consistent with resource management objectives and activities of the area.

FLUID MINERALS. Oil, gas, coal bed natural gas, and geothermal resources.

FORAGE. Vegetation of all forms available and of a type used for animal consumption.

FREE-FLOWING. "Free-flowing," as applied to any river or section of a river, means existing or flowing in a natural condition without impoundment, diversion, straightening, rip-rapping, or other modifications of the waterway. (Wild and Scenic Rivers Act)

FUNCTIONING AT RISK. (1) A condition in which vegetation and soil are susceptible to losing their ability to sustain naturally functioning biotic communities. Human activities, past or present, may increase the risks. (Rangeland Reform Final Environmental Impact Statement [FEIS] at 26.) (2) Uplands or riparian-wetland areas that are properly functioning, but a soil, water, or vegetation attribute makes them susceptible to degradation and lessens their ability to sustain natural biotic communities. Uplands are particularly at risk if their soils are susceptible to degradation. Human activities, past or present, may increase the risks. (Rangeland Reform Draft Environmental Impact Statement [DEIS] Glossary). See also Properly Functioning Condition and Nonfunctioning Condition (H-4180-1, BLM Rangeland Health Standards Manual)

GEOGRAPHIC INFORMATION SYSTEM (GIS). A system of computer hardware, software, data, people and applications that capture, store, edit, analyze, and graphically display a potentially wide array of geospatial information. (H-1601-1, *BLM Land Use Planning Handbook*)

GOAL. A broad statement of a desired outcome; usually not quantifiable and may not have established time frames for achievement. (H-1601-1, *BLM Land Use Planning Handbook*)

GRAZING PREFERENCE. A superior or priority position against others for the purpose of receiving a grazing permit or lease. This priority is attached to base property owned or controlled by the permittee or lessee. (43 CFR 4100.0-5)

GUIDELINE. A practice, method or technique determined to be appropriate to ensure that standards can be met or that significant progress can be made toward meeting the standard. Guidelines are tools such as grazing systems, vegetative treatments, or improvement projects that help managers and permittees achieve standards. Guidelines may be adapted or modified when monitoring or other information indicates the guideline is not effective, or a better means of achieving the applicable standard becomes appropriate. (H-4180-1, BLM Rangeland Health Standards Manual)

HABITAT. An environment that meets a specific set of physical, biological, temporal, or spatial characteristics that satisfy the requirements of a plant or animal species or group of species for part or all of their life cycle. There are four major divisions of habitat, namely, terrestrial, freshwater, estuarine, and marine (M6840, *Special Status Species Manual*).

HABITAT MANAGEMENT PLAN (HMP). An officially approved activity plan for a specific geographic area of public land. An HMP identifies wildlife habitat and related objectives, defines the sequence of actions to be implemented to achieve the objectives, and outlines procedures for evaluating accomplishments.

HERD MANAGEMENT AREA (HMA). Public land under the jurisdiction of the BLM where a decision has been made that wild horses and/or burros can be managed for the long term within that habitat. (H-4710-1)

HERD MANAGEMENT AREA PLAN (HMAP). An action plan that prescribes measures for the protection, management, and control of wild horses and burros and their habitat on one or more herd management areas, in conformance with decisions made in approved management framework or RMPs.

HISTORIC RESOURCES OR HISTORIC PROPERTY. Any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register. The term includes, for purposes of these regulations, artifacts, records, and remains that are related to and located within such properties. The term "eligible for inclusion in the National Register" includes both properties formally determined as such by the Secretary of the Interior and all other properties that meet National Register listing criteria (quoted from 36 CFR 800.2(e); compare National Historic Preservation Act, Section 301, Appendix 5). (See also "cultural resource-cultural property." "Cultural property" is an analogous BLM term not limited by National Register status.) (M-8100-1, BLM Cultural Resources Management) The term can also refer to cultural properties that have a period of use between Euro-American settlement to present.

IMPACTS (OR EFFECTS). Environmental consequences (the scientific and analytical basis for comparison of alternatives) as a result of a proposed action. Effects may be either direct, which are caused by the action and occur at the same time and place, or indirect, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable, or cumulative. (BLM National Management Strategy for OHV Use on Public Lands)

IMPLEMENTATION DECISIONS. Decisions that take action to implement LUP decisions; generally appealable to the Interior Board of Land Appeals under 43 CFR 4.410. (H-1601-1, *BLM Land Use Planning Handbook*).

IMPLEMENTATION PLAN. A subgeographic or site-specific plan written to implement decisions made in a LUP. Implementation plans include activity plans and project plans. (They are types of implementation plans.) (H-1601-1, *BLM Land Use Planning Handbook*)

IMPORTANT VALUE. As related to ACECs, a relevant value, resource, system, process, or hazard that has substantial significance and values. This generally requires qualities of more than local significance and special worth, consequence, meaning, distinctiveness, or cause for concern. A natural hazard can be important if it is a significant threat to human life or property. (43 CFR 1610.7-2 (a) (2))

NATIVE AMERICAN TRIBE. Any Native American group in the conterminous United States that the Secretary of the Interior recognizes as possessing tribal status (listed periodically in the *Federal Register*). (H-1601-1, *BLM Land Use Planning Handbook*)

INDICATORS. Components of a system whose characteristics (presence or absence, quantity, distribution) are used as an index of an attribute (e.g., rangeland health attribute) that are too difficult, inconvenient, or expensive to measure. (Interagency Technical Reference 1734-8, 2000) (H-4180-1, *BLM Rangeland Health Standards Manual*)

INHOLDING. A nonfederal parcel of land that is completely surrounded by federal land.

INTERDISCIPLINARY TEAM. Staff specialists representing identified skill and knowledge needs working together to resolve issues and provide recommendations to an authorized officer (H-4180-1, *BLM Rangeland Health Standards Manual*).

INTERIM MANAGEMENT POLICY. An interim measure governing lands under wilderness review. This policy (H-8550-1) protects wilderness study areas from impairment of their suitability as wilderness.

INTERMITTENT STREAM. A stream that flows only at certain times of the year when it receives water from springs or from some surface source such as melting snow in mountainous areas. Generally, intermittent streams flow continuously for periods of at least 30 days and usually have visible vegetation or physical characteristics reflective of permanent water influences, such as the presence of cottonwoods.

INVASIVE SPECIES. An invasive plant species is one that displays rapid growth and spread, allowing it to establish over large areas.

JURISDICTION. The legal right to control or regulate use. Jurisdiction requires authority, but not necessarily ownership.

LAND TENURE ADJUSTMENTS. Ownership or jurisdictional changes are referred as "Land Tenure Adjustments." To improve the manageability of the BLM lands and their usefulness to the public, BLM has numerous authorities for "repositioning" lands into a more consolidated pattern, disposing of lands, and entering into cooperative management agreements. These land pattern improvements are completed primarily through the use of land exchanges, but also through land sales, by jurisdictional transfers to other agencies, and through the use of cooperative management agreements and leases.

LAND USE ALLOCATION. The identification in a LUP of the activities and foreseeable development that are allowed, restricted, or excluded for all or part of the planning area, based on desired conditions. (H-1601-1, *BLM Land Use Planning Handbook*)

LAND USE PLAN. A set of decisions that establish management direction for land within an administrative area, as prescribed under the planning provisions of FLPMA; an assimilation of land use-plan-level decisions developed through the planning process outlined in 43 CFR 1600, regardless of the scale at which the decisions were developed. The term includes both RMPs and MFPs. (H-1601-1, *BLM Land Use Planning Handbook*).

LEASE. Authorization to possess and use public lands for a fixed time period for any use not specifically authorized under other laws or regulations and not specifically forbidden by law.

LEASE STIPULATION. A modification of the terms and conditions on a lease form at the time of the lease sale.

LEASEABLE MINERALS. Those minerals or materials designated as leasable under the Mineral Leasing Act of 1920, *as amended*. They include coal, phosphate, asphalt, sulphur, potassium, sodium minerals, and oil and gas.

LEK. An assembly area where birds, especially sage grouse, carry on display and courtship behavior.

LIMITED AREAS. Designated areas where the use of OHVs is subject to restrictions, such as limiting the number or types or vehicles allowed, dates and times of use (seasonal restrictions), limiting use to existing roads and trails, or limiting use to designated roads and trails where use would be allowed only on roads and trails that are signed for use. Combinations of restrictions are possible, such as limiting use to certain types of vehicles during certain times of the year. (BLM National Management Strategy for OHV Use on Public Lands)

LOCATABLE MINERALS. Minerals subject to exploration, development, and disposal by staking mining claims as authorized by the Mining Law of 1872, as amended. This includes deposits of gold, silver, and other uncommon minerals not subject to lease or sale.

MANAGEMENT SITUATION ANALYSIS (MSA). Assessment of existing resource conditions and current management direction, prepared in advance of a LUP revision.

MINERAL. Any naturally formed inorganic material. Under federal laws, considered as locatable (subject to the general mining laws), leasable (subject to the Mineral Leasing Act of 1920, and salable (subject to the Materials Act of 1947).

MINERAL ESTATE. The ownership of minerals, including rights necessary for access, exploration, development, mining, ore dressing, and transportation operations.

MINERAL MATERIALS. Materials such as sand and gravel and common varieties of stone, pumice, pumicite, and clay that are not obtainable under the mining or leasing laws. Mineral materials are considered salable minerals that can be acquired under the Materials Act of 1947, as amended.

MINERAL RESERVES. Identified resources that meet specified minimum physical and chemical criteria related to current mining and production practices, including those for grade, quality, thickness, and depth, and that can be economically extracted or produced at the time of determination. Includes only recoverable materials.

MINIMIZE. To reduce the adverse impact of an operation to the lowest practical level.

MINING CLAIM. A parcel of land that a miner takes and holds for mining purposes, having acquired the right of possession by complying with the Mining Law and local laws and rules. A mining claim may contain as many adjoining locations as the locator may make or buy. There are four categories of mining claims: lode, placer, mill site, and tunnel site.

MITIGATION. A measure that will result in a physical change to the proposed action that will actually reduce or eliminate impacts. CEQ NEPA regulations identify five types of measures to deal with significant environmental effects: (1) avoiding the impact altogether by not taking a certain action or parts of an action; (2) minimizing an impact by limiting the degree or magnitude of the action and its implementation; (3) rectifying the impact by repairing, rehabilitating, or restoring the affected environment; (4) reducing or eliminating the impact over time by preservation and maintenance; or (5) compensating for the impact by replacing or providing substitute resources or environments.

MONITORING. Observations, data collection, and studies that evaluate compliance of on-the ground management with the RMP direction, or the effectiveness of RMP-prescribed management direction, in meeting broader goals objectives. Monitoring evaluates whether actions (1) comply with NEPA decisions that have been implemented; (2) achieve the desired objectives (e.g. effectiveness); and (3) are based on accurate assumptions (e.g., validation).

MULTIPLE USE. The management of public lands and their various resource values so that they are used in a combination that will best meet the present and future needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to changing needs and conditions; the use of some land for less than all of the resources; a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources, including recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values; and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output (FLPMA).

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) OF 1969, AS AMENDED. An Act which encourages productive and enjoyable harmony between man and his environment; promotes efforts to prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; enriches the understanding of the ecological systems and natural resources important to the Nation; and establishes a CEQ (BLM *National Management Strategy for OHV Use on Public Lands*)

NATIONAL REGISTER. The National Register of Historic Places, expanded and maintained by the Secretary of the Interior, as authorized by Section 2(b) of the Historic Sites Act and Section 101(a)(1)(A) of the National Historic Preservation Act. The National Register lists cultural properties found to qualify for inclusion because of their local, state, or national significance. Eligibility criteria and nomination procedures are found in 36 CFR Part 60. The Secretary's administrative responsibility for the National Register is delegated to the National Park Service. (M-8100-1, *BLM Cultural Resources Management*)

NATIONAL WILD AND SCENIC RIVERS SYSTEM. A system of nationally designated rivers and their immediate environments that have outstanding scenic, recreational, geologic, fish and wildlife, historic, cultural, and other similar values and are preserved in a free-flowing condition. The system consists of three river classifications: (1) *recreational*—rivers or sections of rivers that are readily

accessible by road or railroad and that may have some development along their shorelines and may have undergone some impoundments or diversion in the past, (2) *scenic*—rivers or sections of rivers free of impoundments with shorelines or watersheds still largely undeveloped but accessible in places by roads, and (3) *wild*—rivers or sections of rivers free of impoundments and generally inaccessible except by trails, with watersheds or shorelines essentially primitive and waters unpolluted.

NATURALNESS. Lands and resources affected primarily by the forces of nature where the imprint of human activity is substantially unnoticeable in an area of 5,000 acres or greater. BLM has authority to inventory, assess, and/or monitor the attributes of the lands and resources on public lands, which, taken together, are an indication of an area's naturalness. These attributes may include the presence or absence of roads and trails, fences and other improvements; the nature and extent of landscape modifications; the presence of native vegetation communities; and the connectivity of habitats (from IM-2003-275, Change 1, *Considerations of Wilderness Characteristics in LUP*, Attachment 1).

NEOTROPICAL MIGRATORY BIRDS. Birds that winter in Central America, South America, the Caribbean, and Mexico and then return to the United States and Canada during spring to breed. Includes almost half of the bird species that breed in the United States and Canada.

NO SURFACE OCCUPANCY. A fluid minerals leasing constraint that prohibits occupancy or disturbance on all or part of the lease surface to protect special values or uses. Lessees may exploit the fluid mineral resources under the leases granted with this stipulation through use of directional drilling from sites outside the area. Leasing with "no surface occupancy" means that there will be no development or disturbance whatsoever of the land surface, including establishment of wells or well pads, and construction of roads, pipelines, or power lines.

NONFUNCTIONING CONDITION. (1) Condition in which vegetation and ground cover are not maintaining soil conditions that can sustain natural biotic communities. (2) Riparian-wetland areas are considered to be in nonfunctioning condition when they do not provide adequate vegetation, landform, or large woody debris to dissipate stream energy associated with high flows and thus are not reducing erosion, improving water quality, or other normal characteristics of riparian areas. The absence of a floodplain may be an indicator of nonfunctioning condition. (H-4180-1, *BLM Rangeland Health Standards Manual*)

NOXIOUS WEEDS. A plant species designated by federal or state law as generally possessing one or more of the following characteristics: aggressive and difficult to manage; parasitic; a carrier or host of serious insects or disease; or non-native, new, or not common to the United States.

OBJECTIVE. A description of a desired condition for a resource. Objectives can be quantified and measured and, where possible, have established time frames for achievement. (H-1601-1, *BLM Land Use Planning Handbook*)

OFF-HIGHWAY VEHICLE (OFF-ROAD VEHICLE). Any motorized vehicle capable of, or designed for, travel on or immediately over land, water, or other natural terrain, excluding (1) any nonamphibious registered motorboat; (2) any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes; (3) any vehicle whose use is expressly authorized by the authorized officer, or otherwise officially approved; (4) vehicles in official use; and (5) any combat or combat support vehicle when used for national defense. (H-1601-1, *BLM Land Use Planning Handbook*)

OFFICIAL USE. Use by an employee, agent, or designated representative of the Federal Government or one of its contractors, in the course of his employment, agency, or representation. (*BLM National Management Strategy for OHV Use on Public Lands*)

OPEN AREA. Generally denotes that an area is available for a particular use or uses. Refer to specific program definitions found in law, regulations, or policy guidance for application to individual programs. For example, 43 CFR 8340.0-5 defines the specific meaning of "open" as it relates to OHV use. (H-1601-1, *BLM Land Use Planning Handbook*)

OPERATOR. An operator is one who has authorization from the BLM to conduct activity on public land.

OUTSTANDINGLY REMARKABLE VALUES. Values among those listed in Section 1(b) of the Wild and Scenic Rivers Act of 1968: "scenic, recreation, geologic, fish and wildlife, historic, cultural, or other similar values...." Other similar values that may be considered include ecological, biological or botanical, paleontological, hydrological, scientific, or research values. (M-8351, BLM WSR Policy and Program)

PALEONTOLOGICAL RESOURCES. Remains and traces of once-living organisms preserved in geologic formations that form the Earth's crust. They constitute a fragile and nonrenewable scientific record of the history of life on earth.

PERENNIAL STREAM. A stream that flows continuously. Perennial streams are generally associated with a water table in the localities through which they flow.

PERMIT. A short-term, revocable authorization to use public lands for specific purposes, Section 302 of FLPMA provides BLM's authority to issue permits for the use, occupancy, and development of the public lands. Permits are issued for purposes such as commercial or noncommercial filming, advertising displays, commercial or noncommercial croplands, apiaries, harvesting of native or introduced species, temporary or permanent facilities for commercial purposes (excludes mining claims), residential occupancy, construction equipment storage sites, assembly yards, oil rig stacking sites, mining claim occupancy if the residential structures are not incidental to the mining operation, and water pipelines and well pumps related to irrigation and nonirrigation facilities. The regulations establishing procedures for the processing of these permits are found in 43 CFR 2920.

PERMITTED USE. The forage allocated by, or under the guidance of, an applicable LUP for livestock grazing in an allotment under a permit or lease, and is expressed in AUMs. (43 CFR § 4100.0-5) (H-4180-1, *BLM Rangeland Health Standards Manual*)

PLANNING AREA. A geographical area for which LUPs and RMPs are developed and maintained.

PLANNING CRITERIA. The standards, rules, and other factors developed by managers and interdisciplinary teams for their use in forming judgments about decision-making, analysis, and data collection during planning. Planning criteria streamline and simplify the resource management planning actions. (H-1601-1, *BLM Land Use Planning Handbook*)

PREFERENCE. A superior or priority position against others for the purpose of receiving a grazing permit or lease. This priority is attached to base property owned or controlled by the permittee or lessee. (43 CFR 4100.0-5). Active preference and suspended preference together make up the total grazing preference.

PRESCRIBED FIRE. Any fire ignited by management action to meet specific objectives. A written approved prescribed fire plan must exist, and NEPA requirements must be met, prior to ignition. (H-9214-1, *BLM Prescribed Fire Management Handbook*)

PRIMITIVE RECREATION. As defined in the Recreation Opportunity Spectrum (ROS), primitive recreation is managed to be essentially free from evidence of humans and onsite controls. Motor vehicle use is not permitted. Means of access include hiking, cross-country skiing, snowshoeing, nonmotorized boating, and horseback riding.

PROPERLY FUNCTIONING CONDITION (PFC). (1) An element of the *Fundamental of Rangeland Health* for watersheds and therefore a required element of state or regional standard and guidelines under 43 CFR § 4180.2(b). (2) Condition in which vegetation and ground cover maintain soil conditions that can sustain natural biotic communities. For riparian areas, the process of determining that function is described in BLM Technical Reference (TR) 1737-9. Final Environmental Impact Statement at 26, 72. (3) Riparian-wetland areas are functioning properly when adequate vegetation, landform, or large woody debris are present to dissipate stream energy associated with high-water flows, thereby reducing erosion and improving water quality; filter sediment, capture bed load, and aid floodplain development; improve floodwater retention and groundwater recharge; develop root masses that stabilize streambanks against cutting action; develop diverse ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and support greater biodiversity. The functioning condition of riparian-wetland areas is influenced by geomorphic features, soil, water, and vegetation. (4) Uplands function properly when the existing vegetation and ground cover maintain soil conditions capable of sustaining natural biotic communities. The functioning condition of uplands is influenced by geomorphic features, soil, water, and vegetation. See also "Nonfunctioning Condition and Functioning at Risk" (H-4180-1, *BLM Rangeland Health Standards Manual*).

PROPOSED SPECIES. Species that have been officially proposed for listing as threatened or endangered by the Secretary of the Interior. A proposed rule has been published in the *Federal Register*. (M-6840, *Special Status Species Manual*)

PUBLIC LAND. Any land and interest that the United States has owned within the several states and administered by the Secretary of the Interior through the BLM, without regard to how the United States acquired ownership, except lands located on the outer continental shelf; lands held in trust for the benefit of Native Americans, Aleuts, and Eskimos; and lands in which the United States retains the mineral estate but the surface is private. (H-8550-1)

RANGE IMPROVEMENT. An authorized physical modification or treatment that is designed to improve production of forage; change vegetation composition; control patterns of use; provide water; stabilize soil and water conditions; restore, protect and improve the condition of rangeland ecosystems to benefit livestock, wild horses and burros, and fish and wildlife. The term includes structures, treatment projects and use of mechanical devices or modifications achieved through mechanical means. (43 CFR § 4100.0-5) (H-4180-1, *BLM Rangeland Health Standards Manual)*

RANGELAND. A kind of land on which the native vegetation, climax or natural potential consists predominantly of grasses, grass like plants, forbs, or shrubs. Rangeland includes lands revegetated naturally or artificially to provide a noncrop plant cover that is managed like native vegetation. Rangeland may consist of natural grasslands, savannahs, shrublands, most deserts, tundra, alpine communities, coastal marshes, and wet meadows. (H-4180-1, *BLM Rangeland Health Standards Manual*)

RANGELAND DRILL: A heavy-duty, side-wheel drill developed for seeding rough terrain in semi-arid regions.

RAPTOR. A group of predatory avian species (e.g., hawks, eagles, falcons, and owls) also referred to as birds of prey, which share various physical characteristics (e.g., sharp talons, strongly curved bill).

REASONABLE FORESEEABLE DEVELOPMENT (RFD) SCENARIO. The prediction of the type and amount of oil and gas activity that would occur in a given area. This prediction is based on geologic factors, past history of drilling, projected demand for oil and gas, and industry interest.

RECORD OF DECISION (ROD). A document signed by a responsible official recording a decision that was preceded by the preparing of an EIS.

RECREATION AND PUBLIC PURPOSES (R&PP) ACT (of 1926). Recreation and Public Purposes Act authorizes the lease or sale of public lands for public purposes to state and local government agencies and nonprofit organizations.

RECREATION OPPORTUNITY SPECTRUM (ROS). A framework for inventorying, planning, and managing recreational opportunities. ROS is divided into six classes: primitive, semiprimitive nonmotorized, semiprimitive motorized, roaded natural, rural, and urban. (See definitions of each class.)

RECREATION RIVER. Wild and Scenic River classification that identifies those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines and that may have undergone some impoundment or diversion in the past.

RELEVANT VALUE. As related to ACECs, a relevant value is a significant historic, cultural, or scenic value; a fish or wildlife resource or other natural system or process; or natural hazard. (43 CFR 1610.7-2 (a) (1))

RELICT PLANT COMMUNITY. A remnant or fragment of vegetation remaining from a former period when the vegetation was more widely distributed.

RESOURCE ADVISORY COUNCIL. A council established by the Secretary of the Interior to provide advice or recommendations to BLM management. (H-1601-1, *BLM Land Use Planning Handbook*)

RESOURCE MANAGEMENT PLAN (RMP). A LUP as described the Federal Land Policy and Management Act. The RMP generally establishes in a written document: (1) land uses for limited, restricted or exclusive use; designations, including ACEC designation; and transfer from BLM administration; (2) allowable resource uses (either singly or in combination) and related levels of production or use to be maintained; (3) resource condition goals and objectives to be attained; (4) program constraints and general management practices needed to achieve the above items; (5) need for an area to be covered by more detailed and specific plans; (6) support action, including such measures as resource protection, access, development, realty action, cadastral survey, etc., as necessary to meet the above; (7) general implementation sequences in which carrying out a planned action is dependent upon prior accomplishment of another planned action; and (8) intervals and standards for monitoring and evaluating the plan to determine the effectiveness of the plan and the need for amendment or revision. (43 CFR 1601.0-5(k))

RIGHT-OF-WAY (ROW). The public lands authorized to be used or occupied for the construction, operation, maintenance, and termination of a project, pursuant to a ROW authorization.

RIGHT-OF-WAY CORRIDOR. A parcel of land that has been identified by law, Secretarial order, through a LUP or by other management decision as being the preferred location for existing and future ROW grants and suitable to accommodate one type of ROW or one or more ROWs that are similar, identical or compatible.

RIPARIAN AREA. A form of wetland transition between permanently saturated wetlands and upland areas. A riparian area is defined as an area of land directly influenced by permanent (surface or subsurface) water. Riparian areas exhibit vegetation or physical characteristics that reflect the influence of permanent surface or subsurface water. Typical riparian areas include lands along, adjacent to, or contiguous with perennially and intermittently flowing rivers and streams, hanging gardens, and areas surrounding seeps and springs. Excluded are ephemeral streams or washes that lack vegetation and depend on free water in the soil.

RIVER. As defined in the Wild and Scenic Rivers Act, "river" means a flowing body of water or estuary or section, portion or tributary thereof, including rivers, streams, creeks, runs, kills, rills, and small lakes.

ROADED NATURAL. As defined in the Recreation Opportunity Spectrum, roaded natural recreation is managed to provide a natural-appearing environment with moderate evidence of humans. Motor vehicle use is permitted and facilities for this use are provided. Activities include wood gathering, downhill skiing, fishing, OHV driving, interpretive uses, picnicking, and vehicle camping.

RURAL. As defined in the Recreation Opportunity Spectrum, rural recreation is managed to provide a setting that is substantially modified with moderate to high evidence of civilization. Motor vehicle use is permitted and visitor conveniences may be provided. Activities are facility/vehicle dependent and include sightseeing, horseback riding, road biking, golf, swimming, picnicking, and outdoor games.

SALABLE MINERALS. Common variety mineral materials on public lands, such as sand and gravel, that are used mainly for construction and are disposed of by sales or special permits.

SCENIC BYWAYS. Highway routes, which have roadsides or corridors of special aesthetic, cultural, or historic value. An essential part of the highway is its scenic corridor. The corridor may contain outstanding scenic vistas, unusual geologic features, or other natural elements.

SCENIC QUALITY RATINGS. The relative scenic quality (A, B, or C) assigned a landscape by applying the scenic quality evaluation key factors; scenic quality A being the highest rating, B a moderate rating, and C the lowest rating. The evaluation factors are landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications. (M-8400, *Visual Resource Management*)

SCENIC RIVER. Wild and Scenic River classification that identifies a river or section of a river that is free of impoundments and whose shorelines are largely undeveloped but accessible in places by roads.

SCOPING. An early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action. This effort involves the participation of affected federal, state, and local agencies, and any affected Native American tribe, the proponent of the action, and other interested persons, unless there is a limited exception under 40 CFR 1507.3I.

SECTION 7 CONSULTATION. The requirement of Section 7 of the Endangered Species Act that all federal agencies consult with the USFWS or the National Marine Fisheries Service if a proposed action might affect a federally listed species or its critical habitat.

SECTION 106 COMPLIANCE. The requirement of Section 106 of the National Historic Preservation Act that any project that the Federal Government funds, licenses, permits, or assists be reviewed for impacts on significant historic properties and that the State Historic Preservation Officer and the Advisory Council on Historic Preservation be allowed to comment on a project.

SEMIPRIMITIVE MOTORIZED. As defined in the Recreation Opportunity Spectrum, semiprimitive motorized recreation is managed to provide a natural-appearing environment with evidence of humans and management controls present, but subtle. Means of access include motorized vehicles and mountain bicycles.

SEMIPRIMITIVE NONMOTORIZED. As defined in the Recreation Opportunity Spectrum, semiprimitive nonmotorized recreation is managed to be largely free from evidence of humans and on-site controls. Motor vehicle use is not permitted (except as authorized). Facilities for the administration of livestock and for visitor use are allowed but limited. Means of access include hiking, cross-country skiing, snow shoeing, nonmotorized boating, and horseback riding.

SENSITIVE SPECIES. Those species designated by a State Director, usually in cooperation with the state agency responsible for managing the species and State Natural heritage programs, as sensitive. They are those species that (1) could become endangered in or extirpated from a state, or within a significant portion of its distribution; (2) are under status review by the FWS and/or NMFS; (3) are undergoing significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution; (4) are undergoing significant current or predicted downward trends in population or density such that federal listed, proposed, candidate, or state-listed status may become necessary; (5) typically have small and widely dispersed populations; (6) inhabit ecological refugia or other specialized or unique habitats; or (7) are state listed but that may be better conserved through application of BLM-sensitive species status (M6840, *Special Status Species Manual*).

SERAL. A seral community is an intermediate stage found in ecological succession in an ecosystem advancing toward its climax community, usually referred to by the name of its dominant vegetation species, which may be the largest or the most common.

SIGNIFICANT. An effect that is analyzed in the context of the proposed action to determine the degree or magnitude of importance of the effect, whether beneficial or adverse. The degree of significance can be related to other actions with individually insignificant but cumulatively significant impacts.

SOCIOECONOMIC STUDY AREA. The geographic area used for estimation and analysis of economic and social impacts.

SOLITUDE. Visitors may have outstanding opportunities for solitude, or primitive and unconfined types of recreation when the sights, sounds, and evidence of other people are rare or infrequent, where visitors can be isolated, alone, or secluded from others, where the use of the area is through nonmotorized, nonmechanical means, and where no or minimal developed recreation facilities are encountered in area of 5,000 acres or greater (from IM-2003-275, Change 1, *Considerations of Wilderness Characteristics in LUP*, Attachment 1).

SPECIAL RECREATION MANAGEMENT AREA (SRMA). A public land unit identified in LUPs to direct recreation funding and personnel to fulfill commitments made to provide specific, structured recreation opportunities (e.g., activity, experience, and benefit opportunities). (H-1601-1, *BLM Land Use Planning Handbook*)

SPECIAL STATUS SPECIES. Includes proposed species, listed species, and candidate species under the Endangered Species Act; state-listed species; and BLM state director-designated sensitive species (see BLM Manual 6840, Special Status Species Policy). (H-1601-1, *BLM Land Use Planning Handbook*)

SPLIT ESTATE. Surface land and mineral estate of a given area under different ownerships. Frequently, the surface will be privately owned and the minerals federally owned.

STANDARD. A description of the physical and biological conditions or degree of function required for healthy, sustainable lands (e.g., Land Health Standards). To be expressed as a desired outcome (goal). (H-1601-1, *BLM Land Use Planning Handbook*).

STANDARDS FOR RANGELAND HEALTH. Descriptions of the desired condition of the biological and physical components and characteristics of rangeland. The four standards deal with upland soils, riparian and wetland areas, desired species, and water quality.

STATE LISTED SPECIES. Species listed by a state in a category implying but not limited to potential endangerment or extinction. Listing is either by legislation or regulation. (M-6840, *Special Status Species Manual*)

STIPULATIONS. Requirements that are part of the terms of various types of leases. Some stipulations are standard on all federal leases. Other stipulations may be applied to the lease at the discretion of the surface management agency to protect valuable surface resources and uses.

SUITABLE RIVER. A Wild and Scenic River determination where a river or river segment is evaluated in the land use planning process and recommended for inclusion in the National Wild and Scenic River System. Suitability may vary by alternative based on the theme of the alternative.

SUPPRESSION. All the work of extinguishing or containing a fire, beginning with its discovery.

SURFACE DISTURBANCE. The alteration or removal of soil or vegetation, usually caused by motorized or mechanical actions, that results in more than negligible disturbance to public lands and resources. Surface disturbance accelerates the natural erosive process. Surface disturbance may result from activities using earth-moving and drilling equipment; geophysical exploration; OHV travel; vegetation treatments; prescribed fire; herbicide applications; and construction of facilities like power lines, pipelines, oil and gas wells, recreation sites, livestock facilities, wildlife waters, or new roads. Surface disturbance may but does not always require reclamation. Surface disturbance is not normally caused by casual use. Activities that are not typically surface disturbing include proper livestock grazing, cross-country hiking, and vehicle travel on designated routes.

SURFACE OCCUPANCY. Placement or construction on the land surface (temporary or permanent) for more than 14 days requiring continual service or maintenance. Casual use is excluded.

SUSTAINABILITY. Long-term management of ecosystems to meet the needs of present human populations without interruption, weakening, or loss of the resource base for future generations. (EPA)

SUSTAINED YIELD. The achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the public lands consistent with multiple use.

TAKE. For the purposes of the endangered species act, the term "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. (Endangered Species Act of 1973)

THREATENED SPECIES. Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. (Endangered Species Act of 1973)

TIMING LIMITATION (SEASONAL RESTRICTION). A fluid minerals leasing constraint that prohibits surface use during specified time periods to protect identified resource values. The constraint does not apply to the operation and maintenance of production facilities unless analysis demonstrates that such constraints are needed and that less stringent, project-specific constraints would be insufficient.

TOTAL MAXIMUM DAILY LOAD (TMDL). An estimate of the total quantity of pollutants (from all sources: point, nonpoint, and natural) that may be allowed into waters without exceeding applicable water quality criteria. (H-1601-1, *BLM Land Use Planning Handbook*)

TOTAL PREFERENCE. The total number of animal units of livestock grazing on public lands, apportioned and attached to base property owned or controlled by a permittee or lessee. The active preference and suspended preference are combined to make up the total grazing preference.

UNALLOTTED LANDS. Public lands available for grazing that currently have no livestock grazing authorized.

UNDERTAKING. A project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including those carried out by or on behalf of a federal agency; those carried out with federal financial assistance; those requiring a federal permit, license, or approval; and those subject to state or local regulation administered pursuant to a delegation or approval by a federal agency.

UNSUITABILITY CRITERIA. Criteria of the federal coal management program by which lands may be assessed as unsuitable for all or certain stipulated methods of coal mining. (43 CFR 4300.)

URBAN. As defined in the Recreation Opportunity Spectrum, urban recreation is managed to provide a setting that is largely modified. Large numbers of users can be expected, and vegetation cover is often exotic and manicured. Facilities for highly intensified motor vehicle use and parking are available, with mass transit often included to carry people throughout the site.

USER DAY. Any calendar day, or portion thereof, for each individual accompanied or serviced by an operator or permittee on the public lands or related waters; synonymous with passenger day or participant day.

UTILITY. A service that a public utility provides (e.g., electricity, telephone, or water).

UTILITY CORRIDOR. A parcel of land, linear or aerial in character, that has been identified by law, Secretarial Order, the land-use planning process, or by other management decision, as being a preferred location for existing and future ROW grants and suitable to accommodate more than one type of ROW or one or more ROW that are similar, identical, or compatible.

VALID EXISTING RIGHTS. Legal "rights" or interest that are associated with a land or mineral estate and that cannot be divested from the estate until that interest expires or is relinquished. Lands within the

RFO are subject to various authorizations, some giving "rights" to the holders and some of which could be construed as providing valid, but lesser, interests. Various laws, leases, and filings under federal law establish valid existing rights.

Mineral: Valid existing rights govern authorizations for activities on existing mineral leases and mining claims. Valid existing rights vary from case to case with respect to oil and gas leases, mineral leases, and mining claims, but they generally involve rights to explore, develop, and produce within the constraints of laws, regulations, and policies at the time the lease/claim was established or authorized.

Nonmineral: There are other situations, unrelated to minerals, in which BLM has authorized some use of public land or has conveyed some limited interest in public land. The authorization may be valid and existing and may convey some "right" or interest. Many ROWs, easements, and leases granted on public land are this type of valid existing right. These types vary from case to case, but the details of each one are specified in the authorizing document. Valid and existing authorizations of this type would continue to be allowed subject to the terms and conditions of the authorizing document.

RS-2477: Some government entities may have a valid existing right to an access route under Revised Statutes (R.S.) 2477, Act of June 26, 1866, ch. 262, § 8, 14 Stat. 251 [codified as amended at 43 U.S.C. § 932 until repealed in 1976 by the FLPMA, Public Law 94-579, Section 706(a), Stat. 2744, 2793 (1976)], which granted "[the right-of-way for the construction of highways over public lands, not reserved for public uses.]" The validity of individual claims would have to be determined on a case-by-case basis. If claims are determined to be valid R.S. 2477 highways, the RMP would respect those as valid existing rights.

Access: The presence of nonfederal land within the decision area has implications for valid existing rights because owners of nonfederal land surrounded by public land are entitled to reasonable access to their land. Reasonable access is defined as access that the Secretary of the Interior deems adequate to secure the owner reasonable use and enjoyment of the nonfederal land. Such access is subject to rules and regulations governing the administration of public land. In determining reasonable access, the BLM has discretion to evaluate and would consider such things as proposed construction methods and location, reasonable alternatives, and reasonable terms and conditions as are necessary to protect the public interest and resources of the RFO.

Other: Various other land use authorizations do not involve the granting of legal "rights" or interests. For example, outfitter and guide permits authorize certain uses of public land for a specified time, under certain conditions, without conveying a right, title, or interest in the land or resources used. At any time, if it is determined that an outfitter and guide permit, other such permit, or any activities under those permits, are not consistent with the approved RMP, then the authorization would be adjusted, mitigated, or revoked where legally possible. Grazing permits also are in this category. Grazing permits or leases convey no right, title, or interest in the land or resources used. Other applicable laws and regulations govern changes to existing grazing permits and levels of livestock grazing.

VEGETATION TYPE. A plant community with distinguishable characteristics described by the dominant vegetation present.

VISUAL RESOURCE MANAGEMENT (VRM). A system by which BLM inventories and manages scenic values and visual quality of public lands. The system is based on research that has produced ways of assessing aesthetic qualities of the landscape in objective terms. In RMPs, lands are assigned management classes), which determine the amount of modification allowed for the basic elements of the landscape. (See also Scenic Quality Ratings.)

VISUAL RESOURCE MANAGEMENT (VRM) CLASSES. Categories assigned to public lands based on scenic quality, sensitivity level, and distance zones. There are four classes. Each class has an objective which prescribes the amount of change allowed in the characteristic landscape. (H-1601-1, *BLM Land Use Planning Handbook*)

- **VRM Class I:** Preserve the existing character of the landscape. The level of change to the characteristic landscape should be very low and must not attract visitor attention.

- **VRM Class II**: Retain the existing character of the landscape. The level of change to the landscape should be low. Management activities may be seen but should not attract the attention of the casual observer.

- **VRM Class III:** Partially retain the existing character of the landscape. The level of change to the landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer.

- **VRM Class IV:** Provide for management activities that require major modification of the existing character of the landscape. The level of change to landscape can be high.

WAIVER. Permanent exemption from a lease stipulation. The stipulation no longer applies anywhere within the leasehold.

WATER QUALITY. The chemical, physical, and biological characteristics of water with respect to its suitability for a particular use.

WATERSHED. All lands and water that drain to a given point. Watersheds are often defined in terms of topographic divides (e.g., ridge lines).

WAY. A vehicle route within a WSA that was in existence and identified during the FLPMA Section 603-mandated wilderness inventory. Interim Management Policy for Lands under Wilderness Review (H-8550-1) defines a way as "a track maintained solely by the passage of vehicles, which has not been improved and/or maintained by mechanical means to ensure relatively regular and continuous use." The term is also used during wilderness inventory to identify routes that are not roads. The term is developed from the definition of the term "roadless" provided in the *Wilderness Inventory Handbook* (September 27, 1978), as follows: "roadless: refers to the absence of roads which have been improved and maintained by mechanical means to insure relatively regular and continuous use. A way maintained solely by the passage of vehicles does not constitute a road."

WETLANDS. Areas that are inundated or saturated by surface or ground water often and long enough to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

WILD HORSES AND BURROS. Unbranded and unclaimed horses and burros that use public lands as all or part of their habitat or that have been removed from these lands by the authorized officer but have not lost their status under Section 3 of the Act. (H-4750-2, *BLM Wild Horse and Burro Adoption Handbook*)

WILD RIVER. Wild and Scenic River classification that identifies those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.

WILDERNESS. A congressionally designated area of undeveloped federal land retaining its primeval character and influence, without permanent improvements or human habitation, that is protected and managed to preserve its natural conditions as described in Section 2A of the Wilderness Act of 1964 and that (1) generally appears to have been affected mainly by the forces of nature, with human imprints substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least 5,000 acres or is large enough to make practical its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historic value.

WILDERNESS CHARACTERISTICS. Features of the land associated with the concept of wilderness that specifically deal with naturalness and opportunities for solitude and primitive and unconfined recreation. These characteristics may be considered in land use planning when BLM determines that those characteristics are reasonably present, of sufficient value (condition, uniqueness, relevance, importance), and need (trend, risk), and are practical to manage (from IM-2003-275, Change 1, Considerations of Wilderness Characteristics in LUP, Attachment 1).

WILDERNESS STUDY AREA (WSA). An area identified pursuant to Section 603 of the Federal Land Policy and Management Act as having wilderness characteristics as described in the Wilderness Act of 1964—that is, an area that (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) is at least 5,000 acres or is of sufficient size to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic or historical value.

WILDLAND FIRE. Any fire, regardless of ignition source, that is burning outside of a prescribed fire and any fire burning on public lands or threatening public land resources, where no fire prescription standards have been prepared. (H-1742-1, *BLM Emergency Fire Rehabilitation Handbook*)

WILDLAND FIRE USE. The management of naturally ignited wildland fires to accomplish specific pre-stated resource management objectives in predefined geographic areas outlined in Fire Management Plans.

WILDLAND URBAN INTERFACE (WUI). The line, area, or zone in which structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.

WINTER RANGE. Range that is grazed by livestock or wildlife during winter.

WITHDRAWAL. An action that restricts the use of public lands by removing them from the operation of some or all of the public land laws (e.g., mineral entry laws).

WOODLAND. A forest community occupied primarily by noncommercial species such as juniper, pinyon pine, mountain mahogany, or quaking aspen groves; all western juniper forestlands are considered woodlands because juniper is classified as a noncommercial species.

ACRONYMS AND ABBREVIATIONS

AAP	Average Annual Precipitation
ACEC	Area of Critical Environmental Concern
ACHP	Advisory Council on Historic Preservation
ADC	Animal Damage Control
AGRC	The State of Utah's Automated Geographic Reference Center
AML	Appropriate Management Level/Abandoned Mine Lands
AMLIS	Abandoned Mine Land Inventory System
AMP	Allotment Management Plan
AMR	Appropriate Management Response
AMS	Analysis of the Management Situation
AO	Authorized Officer
APD	Application for Permit to Drill (an oil or gas well)
APE	Area of Potential Effect
APHIS	Animal and Plant Health Inspection Service (USDA)
APP	Avian Protection Plan
ARAR	Applicable or Relevant and Appropriate Requirements
ARPA	Archaeological Resource Protection Act (of 1979)
ASCII	American Standard Code for Information Interchange
ATV	All-Terrain Vehicle
AU	Assessment Unit
AUM	Animal Unit Month
BA	Biological Assessment
BAER	Burned Area Emergency Rehabilitation
BCC	Birds of Conservation Concern
bcf	Billion Cubic Feet

bcfg	Billion Cubic Feet Gas
BHCA	Bird Habitat Conservation Area
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BMP	Best Management Practice
BO	Biological Opinion
BOR	(United States) Bureau of Reclamation
BPS	Budget Planning System
Btu	British Thermal Unit
CAA	Clean Air Act (of 1970)
CBM	*See* CBNG; Coalbed Methane
CBNG	Coalbed Natural Gas
CCC	Civilian Conservation Corps
CDCA	California Desert Conservation Area
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (of 1980)
CFR	*Code of Federal Regulations*
CHL	Combined Hydrocarbon Lease
CIS	Cumulative Impact Score
CO	Carbon Monoxide
CO_2	Carbon Dioxide
COA	Condition of Approval
CRMP	Cultural Resource Management Plan
CRNP	Capitol Reef National Park (Add spell out in Appendix 5)
CSU	Controlled Surface Use
CWA	Clean Water Act (of 1977)

CWMA	Cooperative Weed Management Area
CX	Categorical Exclusion
dB	Decibel
dBA	A-weighted Decibel
DEIS	Draft Environmental Impact Statement
DLE	Desert Land Entry
DOD	Department of Defense
DOI	(United States) Department of the Interior
DPC	Desired Plant Community
DRMP	Draft Resource Management Plan
DWFC	Desired Wildland Fire Conditions
DWR	Division of Wildlife Resources
EA	Environmental Assessment
EAR	Environmental Analysis Record
EIS	Environmental Impact Statement
EMF	Electric and Magnetic Fields
EMI	Electromagnetic Interference
EO	Executive Order
EPA	Environmental Protection Agency
EPCA	Energy Policy and Conservation Act
ERMA	Extensive Recreation Management Area
ESA	Endangered Species Act (of 1973)
ESR	Emergency Stabilization and Rehabilitation
ESRI	Environmental Systems Research Institute
FAA	Federal Aviation Administration
FCC	Federal Communications Commission

FE	Federal—Endangered
FEIS	Final Environmental Impact Statement
FERC	Federal Energy Regulatory Commission
FHWA	Federal Highway Administration
FIRE	Fire, Insurance, and Real Estate
FLREA	Federal Lands Recreation Enhancement Act
FLPMA	Federal Land Policy and Management Act (of 1976)
FMP	Fire Management Plan
FMU	Fire Management Unit
FMZ	Fire Management Zone
FO	Field Office
FOGRMA	Federal Oil and Gas Royalty Management Act (of 1982)
FOOGLRA	Federal Onshore Oil and Gas Leasing Reform Act of 1987
FPA	Fire Program Analysis
FR	*Federal Register*
FRCC	Fire Regime Condition Class
FT	Federal—Threatened
FY	Fiscal Year
GAP	Geographical Analysis Program
GIS	Geographic Information Systems
GPS	Global Positioning System
GRC	General Risk Categories
HFI	Healthy Forest Initiative
HFRA	Healthy Forests Restoration Act (of 2003)
HMA	Herd Management Area
HMAP	Herd Management Area Plan

HMP	Habitat Management Plan
HMRRP	Hazard Management and Resource Restoration Program
HUC	Hydrologic Unit Code
HUD	(Department of) Housing and Urban Development
IBLA	Interior Board of Land Appeals
ID	Inter-Disciplinary
IM	Instruction Memorandum
IMP	Interim Management Policy (for Lands Under Wilderness Review)
IMPROVE	Interagency Monitoring of Protected Visual Environments (Network)
IPCC	Intergovernmental Panel on Climate Change
KGRA	Known Geothermal Resource Area
KRCRA	Known Recoverable Coal Resource Area
kV	Kilovolt
LTA	Land Tenure Adjustment
LUP	Land Use Plan
LWCF	Land and Water Conservation Fund
MBTA	Migratory Bird Treaty Act (of 1918)
mcf	Thousand Cubic Feet
Mcfg	Thousand Cubic Feet Gas
MFP	Management Framework Plan (pre-FLPMA BLM land use plan)
MMS	Minerals Management Service
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MPDS	Maximum Potential Development Scenario
MSA	Management Situation Analysis
MSO	Mexican spotted owl

NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act (of 1990)
NCA	National Conservation Area
NCRDS	National Coal Resources Data System
NEPA	National Environmental Policy Act (of 1969)
NGL	Natural Gas Liquids
NHL	National Historic Landmark
NHP	Natural Heritage Program
NHPA	National Historic Preservation Act
NL-b	Not Likely to Adversely Affect—completely beneficial
NL-d	Not Likely to Adversely Affect—discountable
NL-i	Not Likely to Adversely Affect—insignificant
NLCS	National Landscape Conservation System
NNL	National Natural Landmark
NOA	Notice of Availability (published in the *Federal Register*)
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent (published in the *Federal Register*)
NO_x	Nitrogen Oxides
NP	National Park
NPA	National Programmatic Agreement
NPS	National Park Service
NRA	National Recreation Area
NRCS	Natural Resources Conservation Service
NREL	National Renewable Energy Laboratory
NRHP	National Register of Historic Places
NRI	National Rivers Inventory

NSO	No Surface Occupancy (a stipulation on an oil and gas lease)
NWSRS	National Wild and Scenic River System
OHV	Off-Highway Vehicle
PAC	Protected Activity Center
PARM	Parker Mountain Adaptive Resource Management
PEIS	Programmatic Environmental Impact Statement
PFC	Proper Functioning Condition (of riparian/wetland areas)
PIF	Partners in Flight
PILT	Payments in Lieu of Taxes
PL	Public Law
PM	Particulate Matter
POD	Plan of Development
PDF	Portable Document Format
PFO	Price Field Office
PRIA	Public Rangelands Improvement Act
PRMP/FEIS	Proposed Resource Management Plan/Final Environmental Impact Statement
PSD	Prevention of Significant Deterioration
PWR	Public Water Reserve
R&I	Relevance and Importance
R&PP	Recreation and Public Purposes (Act of 1926)
RARE II	Roadless Area Review and Evaluation (1979 USFS Roadless Inventory)
RCRA	Resource Conservation and Recovery Act (1976)
RDCC	(Utah) Resource Development and Coordinating Committee
REA	Rural Electric Association
RFA	Reasonably Foreseeable Action (or Activity)
RFD	Reasonably Foreseeable Development

RFO	Richfield Field Office
RHS	Rangeland Health Standards
RIFC	Richfield Interagency Fire Center
RMA	Recreation Management Area
RMIS	Recreation Management Information System
RMP	Resource Management Plan (BLM land use plan under FLPMA)
RMZ	Recreation Management Zone
RNA	Research Natural Area
ROD	Record of Decision
ROS	Recreation Opportunity Spectrum
ROW	Right-of-Way
RS	Revised Statute
RUP	Recreation Use Permits
S&G	Standards and Guidelines
SCORP	Statewide Comprehensive Outdoor Recreation Plan
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SITLA	(Utah) School and Institutional Trust Lands Administration
SO_2	Sulfur Dioxide
SRH	Standards for Rangeland Health
SRMA	Special Recreation Management Area
SRP	Special Recreation Permit
SSS	Special Status Species
STSA	Special Tar Sand Area
SUFCO	Southern Utah Fuel Company
SUV	Sport Utility Vehicle

SUWA	Southern Utah Wilderness Alliance
T&E	Threatened and/or Endangered (species as per ESA of 1973)
Tcf	Trillion Cubic Feet
TCP	Traditional Cultural Property
TDS	Total Dissolved Solids
TL	Timing Limitation
TMDL	Total Maximum Daily Load
TNC	The Nature Conservancy
UDAQ	Utah Department of Air Quality
UDEQ	Utah Division of Environmental Quality
UDNR	Utah Department of Natural Resources
UDOGM	Utah Division of Oil, Gas, and Mining
UDOT	Utah Department of Transportation
UDWaR	Utah Division of Water Resources
UDWQ	Utah Division of Water Quality
UDWR	Utah Division of Wildlife Resources
UEO	Utah Energy Office
UGS	Utah Geological Survey
URA	Unit Resource Analysis
URC	Utah Rivers Council
USA-ALL	Utah Shared Access Alliance
U.S.C.	United States Code
USDA	United States Department of Agriculture
USDI	United States Department of the Interior
USDOE	United States Department of Energy
USFS	United States Forest Service

USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
USU	Utah State University
VOC	Volatile Organic Compound
VQO	Visual Quality Objective
VRI	Visual Resource Inventory
VRM	Visual Resource Management
WAFWA	Western Association for Fish and Wildlife Agencies
WIA	Wilderness Inventory Area
WMA	Wildlife Management Area
WO	Washington Office (of BLM)
WSA	Wilderness Study Area
WSR	Wild and Scenic River
WUG	Western Utility Group
WUI	Wildland Urban Interface

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APPENDIX 1—SUMMARY OF THE AREAS OF CRITICAL ENVIRONMENTAL CONCERN REPORT

Appendix 1 summarizes the process used for evaluating nominations for areas of critical environmental concern (ACEC) that the Bureau of Land Management (BLM) considered in developing the Richfield Resource Management Plan (RMP). The ACEC Evaluation Report, Richfield Resource Management Plan, January 2005, includes full documentation of the process. This report can be viewed at the Richfield Field Office.

In brief, BLM staff and cooperators evaluated 26 nominations for ACECs, totaling 1.6 million acres within the Richfield Field Office (RFO) and portions of the Price Field Office. Of these, 16 areas totaling 886,810 acres within the RFO, plus additional acreage within the Price Field Office, met the criteria for relevant and important values and were identified as potential ACECs.

Management actions under the Proposed RMP include designating and managing the North Caineville Mesa ACEC and the Old Woman Front ACEC. Three of the four existing ACECs (South Caineville Mesa ACEC, Gilbert Badlands ACEC, and Beaver Wash ACEC) would not be designated. These three existing ACECs are mostly within Wilderness Study Areas (WSA), and the relevant and important values would be protected under the provisions of the Interim Management Policy (IMP). Resource decisions under the Proposed RMP and existing laws, rules, and regulations would protect the relevant and important values of the other potential ACECs.

BACKGROUND

BLM is directed by law, regulation, and policy to consider designating and protecting ACECs when developing land use plans (LUP).

The Law: Federal Land Policy and Management Act (FLPMA) of 1976

> *In the development and revision of land use plans, the Secretary shall…give priority to the designation and protection of areas of critical environmental concern.*
>
> —Federal Land Policy and Management Act (FLPMA), Title II, Sec 202(c) 3

> *The term "areas of critical environmental concern" (often referred to as "ACECs") means areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards."*
>
> —FLPMA, Title I, Sec 103(a)

The Regulation: 43 Code of Federal Regulations (CFR) 1610.7-2

To be a potential ACEC, both of the following criteria shall be met:

Relevance: There shall be present a significant historic, cultural, or scenic value; a fish or wildlife resource or other natural system or process; or a natural hazard.

Importance: The above described value, resource, system, process, or hazard shall have substantial significance and values. This generally requires qualities of more than local significance and special worth, consequence, meaning, distinctiveness, or cause for concern.

The Policy: BLM Manual 1613

BLM Manual 1613 provides direction for identifying, analyzing, designating, monitoring, and managing ACECs. Key points are as follows:

- The ACEC designation indicates to the public that the BLM recognizes that an area has significant values and has established special management measures to protect those values.
- Designation of ACECs is made only through the resource management planning process, either in an RMP itself or in a plan amendment.
- To be designated as an ACEC, an area must require special management attention to protect the important and relevant values.
- Potential ACECs are identified as early as possible in the planning process.
- Existing ACECs are subject to reconsideration when plans are revised.
- Members of the public or other agencies may nominate an area for consideration as a potential ACEC. BLM personnel are encouraged to recommend areas for consideration as ACECs.
- No formal or special procedures are associated with nomination.
- An interdisciplinary team evaluates each resource or hazard to determine if it meets the relevance and importance criteria. The field manager approves the relevance and importance criteria.
- If an area is found not to meet the relevance and importance criteria, the analysis supporting that conclusion must be included in the RMP and associated environmental impact statement (EIS).

EVALUATION PROCESS

Existing ACECs

Four ACECs total 14,780 acres within the RFO: Beaver Wash, North Caineville Mesa, and South Caineville Mesa ACECs, which were established in 1982, and the Gilbert Badlands ACEC, which was established in 1986 (see Table A1-1 below). As required by BLM policy, evaluations for the existing ACECs were reviewed in developing the new RMP. All were found to meet the criteria for relevance and importance.

Table A1-1. Existing ACECs Within the Richfield Field Office

	ACEC Name	Public Land Acres	County
1	Beaver Wash	4,800	Wayne
2	Gilbert Badlands	3,680	Wayne
3	North Caineville Mesa	2,200	Wayne
4	South Caineville Mesa	4,100	Wayne
	Total	**14,780**	

ACEC Nominations

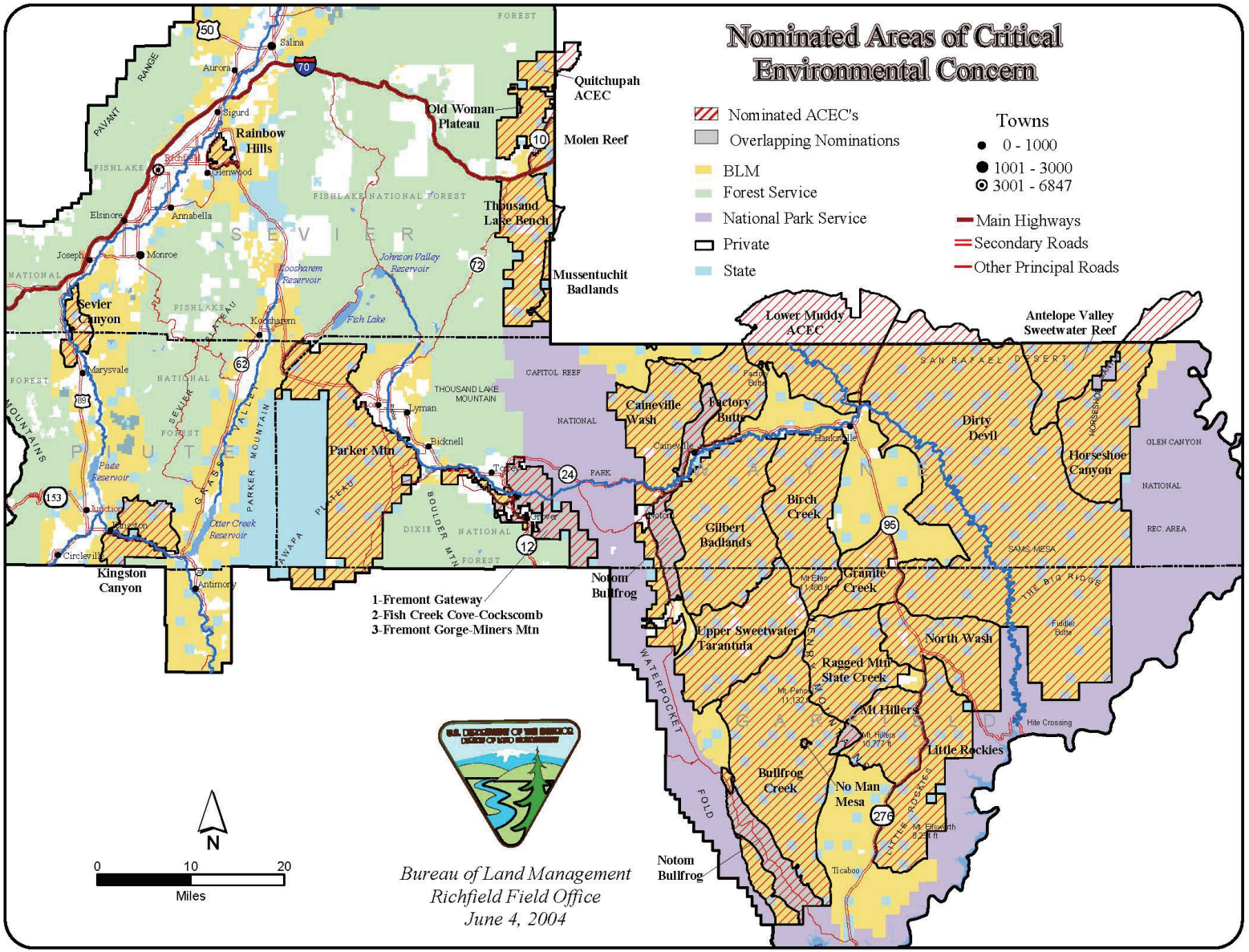
Thirty ACECs were nominated during scoping for the Richfield RMP. The Southern Utah Wilderness Alliance (SUWA), the Nature Conservancy (TNC), the U.S. Fish and Wildlife Service (USFWS), three Utah residents, and a BLM employee submitted nominations. Of these, RFO staff evaluated 26 areas totaling 1.6 million acres (shown below in Table A1-2 and the Nominated ACEC Map). The remaining four—Antelope Valley/Sweetwater Reef, Cedar Mountain, Molen Reef, and Mussentuchit Badlands—are primarily within the Price Field Office, with small acreages within the RFO. Price BLM staff evaluated them during development of the Price RMP. Some nominations overlap other nominations, and some nominations overlap the existing ACECs. Nominations were evaluated in accordance with BLM Manual 1613, Areas of Critical Environmental Concern. Values meeting the relevance and importance criteria were carried forward into the potential ACECs. See Nominated ACEC Map below.

During the public comment period on the Draft Resource Management Plan/Draft Environmental Impact Statement (DRMP/DEIS), the RFO received suggestions for additional ACECs. The nominated Wild Horse and Burro ACEC was considered but not found to possess relevance and importance values. In addition, other ACECs were suggested, but not enough information was supplied to assess the proposals for their relevant and important values.

Table A1-2. Nominated ACECs

	Nominated Area	Public Land Acres	County(ies)
1	Bull Creek Archaeological ACEC	67,809	Wayne and Garfield
2	Bullfrog Creek Drainage	149,370	Garfield
3	Caineville Wash	55,552	Wayne
4	Dirty Devil Drainage	371,257	Emery, Wayne, Garfield
5	Factory Butte	39,130	Wayne
6	Fish Creek Cove/Cockscomb	1,752	Wayne
7	Fremont Gorge/Miners Mountain	27,145	Wayne
8	Fremont Valley Gateway	34,314	Wayne
9	Gilbert Badlands	105,588	Garfield and Wayne
10	Granite Creek Drainage	29,639	Garfield and Wayne
11	Horseshoe Canyon Drainage	72,281	Emery and Wayne
12	Kingston Canyon	22,324	Piute
13	Little Rockies	60,515	Garfield
14	Lower Muddy Creek Drainage	82,703	Emery and Wayne
15	Mount Hillers	38,527	Garfield
16	No Man Mesa	315	Garfield
17	North Wash Drainage	50,865	Garfield
18	Notom-Bullfrog Scenic	53,783	Wayne and Garfield
19	Old Woman Front	326	Sevier
20	Parker Mountain	107,809	Wayne, Piute, and Garfield

21	Quitchupah Creek/Trough Hollow	26,888	Sevier and Emery
22	Ragged Mountain/Slate Creek Drainage	49,695	Garfield
23	Rainbow Hills	3,995	Sevier
24	Sevier Canyon	8,889	Piute and Sevier
25	Thousand Lake Bench	38,467	Sevier and Emery
26	Upper Sweetwater Drainage—Tarantula Mesa	63,162	Garfield and Wayne
27	Wild Horse and Burro	77,255	Wayne
	Total	**1,639,355**	


Nominated Areas of Critical Environmental Concern
Nominated ACEC's
Overlapping Nominations
BLM
Forest Service
National Park Service
Private
State
Towns
0 - 1000
1001 - 3000
3001 - 6847
Main Highways
Secondary Roads
Other Principal Roads
Quitchupah ACEC
Old Woman Plateau
Molen Reef
Thousand Lake Bench
Mussentuchit Badlands
Lower Muddy ACEC
Antelope Valley Sweetwater Reef
Rainbow Hills
Sevier Canyon
Kingston Canyon
Parker Mtn
Caineville Wash
Factory Butte
Dirty Devil
Horseshoe Canyon
Birch Creek
Gilbert Badlands
Granite Creek
Upper Sweetwater Tarantula
North Wash
Ragged Mtn Slate Creek
Mt Hillers
Little Rockies
Bullfrog Creek
No Man Mesa
Notom Bullfrog
1-Fremont Gateway
2-Fish Creek Cove-Cockscomb
3-Fremont Gorge-Miners Mtn
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Miles
Bureau of Land Management
Richfield Field Office
June 4, 2004

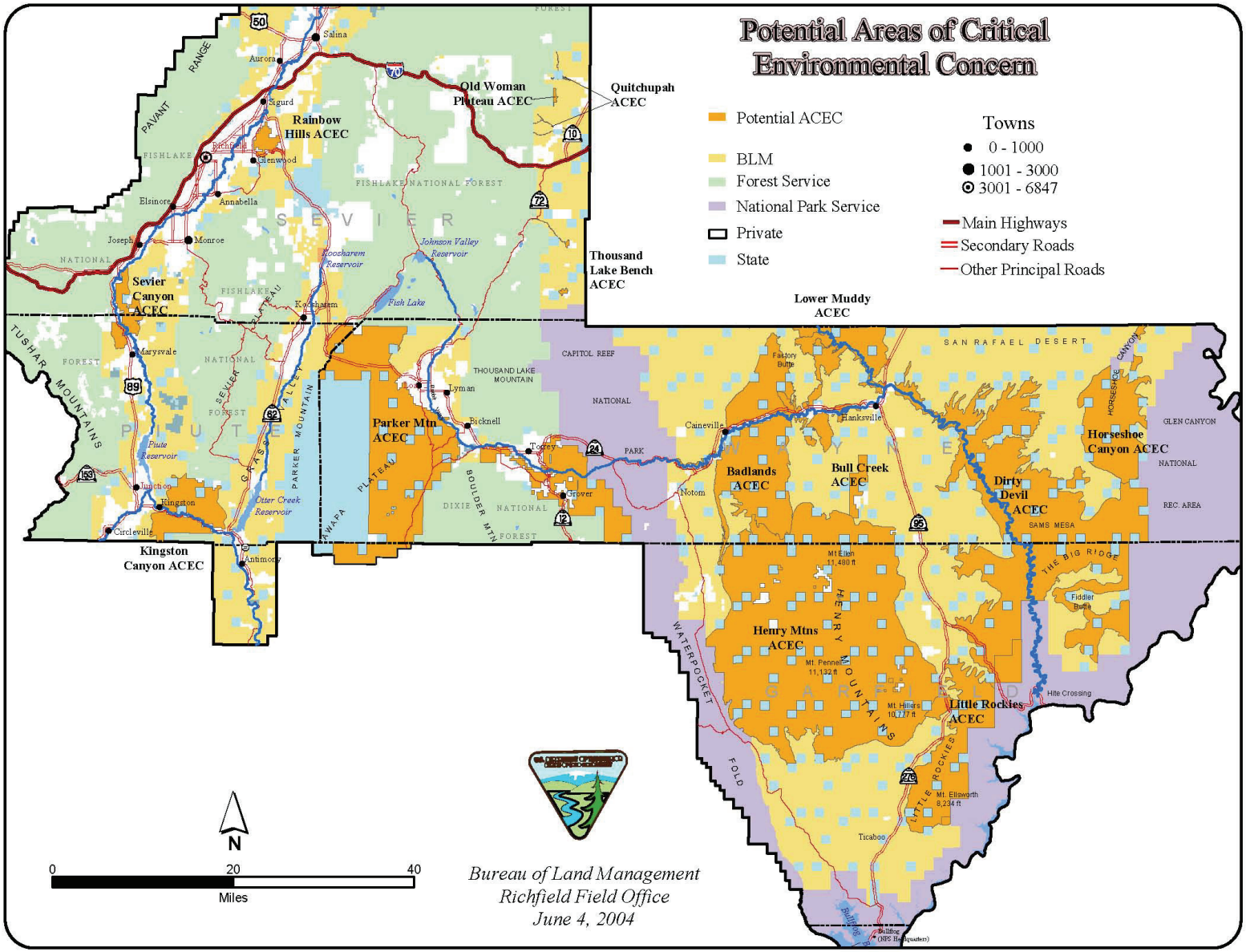
Potential ACECs

Following the evaluation of relevant and important values, 16 areas totaling 886,810 acres were identified as potential ACECs. (See Table A1-3 and Potential ACEC map below.) Potential ACECs were determined in three ways:

- The potential ACEC is the same as the nominated ACEC because some or all of the values determined relevant and important are found throughout the nominated area.
- The potential ACEC is smaller than the nominated ACEC because the values determined relevant and important are found in only parts of the nominated area.
- The potential ACEC is composed of all or parts of several nominated ACECs because values determined relevant and important were found in adjoining nominated areas.

Table A1-3. Potential ACECs

	Area Name	Acreage	County(ies)
1	Badlands Scenic and Natural Processes ACEC. Includes: • Gilbert Badlands ACEC, 3,680 acres • North Caineville Mesa ACEC, 2,200 acres • South Caineville Mesa ACEC, 4,100 acres	88,900	Wayne
2	Bull Creek Archaeological ACEC	4,800	Wayne
3	Dirty Devil Scenic Cultural and Wildlife ACEC. Includes: • Beaver Wash ACEC, 4,800 acres	205,300	Wayne and Garfield
4	Fremont Gorge/Cockscomb Cultural and Scenic ACEC	34,300	Wayne
5	Henry Mountains Scenic and Wildlife ACEC. Includes: • No Man Mesa Potential ACEC, 315 acres	288,200	Wayne and Garfield
6	Horseshoe Canyon Scenic and Cultural ACEC	40,900	Wayne
7	Kingston Canyon Riparian and Mule Deer ACEC	22,100	Piute
8	Little Rockies Scenic and Wildlife ACEC	49,200	Garfield
9	Lower Muddy Creek Scenic and Plant ACEC	16,200	Wayne
10	Old Woman Front Relict Vegetation ACEC	330	Sevier
11	Parker Mountain Sagebrush-Steppe ACEC	107,900	Wayne
12	Quitchupah Archaeological ACEC	180	Sevier
13	Rainbow Hills Natural System ACEC	4,000	Sevier
14	Sevier Canyon Riparian and Mule Deer ACEC	8,900	Piute and Sevier
15	Thousand Lake Bench Vegetation ACEC	500	Wayne
16	Special Status Species ACEC	15,100	Wayne
	Total	**886,810**	


Potential Areas of Critical Environmental Concern
Potential ACEC
BLM
Forest Service
National Park Service
Private
State
Towns
0 - 1000
1001 - 3000
3001 - 6847
Main Highways
Secondary Roads
Other Principal Roads
Old Woman Plateau ACEC
Quitchupah ACEC
Rainbow Hills ACEC
Thousand Lake Bench ACEC
Lower Muddy ACEC
Sevier Canyon ACEC
Parker Mtn ACEC
Kingston Canyon ACEC
Badlands ACEC
Bull Creek ACEC
Dirty Devil ACEC
Horseshoe Canyon ACEC
Henry Mtns ACEC
Little Rockies ACEC
Salina
Aurora
Sigurd
Glenwood
Elsinore
Annabella
Joseph
Monroe
Marysvale
Junction
Kingston
Circleville
Antimony
Koosharem
Fish Lake
Johnson Valley Reservoir
Koosharem Reservoir
Otter Creek Reservoir
Fiute Reservoir
Lyman
Bicknell
Torrey
Grover
Caineville
Hanksville
Factory Butte
Notom
Mt Ellen 11,460 ft
Mt. Pennell 11,132 ft
Mt. Hillers 10,727 ft
Mt. Ellsworth 8,234 ft
Fiddler Butte
Hite Crossing
Ticaboo
Bullfrog (NPS Headquarters)
SEVIER
PIUTE
WAYNE
SAN RAFAEL DESERT
FISHLAKE NATIONAL FOREST
CAPITOL REEF NATIONAL PARK
THOUSAND LAKE MOUNTAIN
HENRY MOUNTAINS
GARFIELD
N
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Miles
Bureau of Land Management
Richfield Field Office
June 4, 2004

EXISTING AND POTENTIAL ACECS SUMMARY STATEMENTS

The following is a summary of the existing and potential ACECs in the Proposed Resource Management Plan (PRMP)/Final Environmental Impact Statement (FEIS).

North Caineville Mesa ACEC

The North Caineville Mesa ACEC encompassing 2,200 acres would continue to be managed as an ACEC for the relevant and important value of relict vegetation.

South Caineville Mesa ACEC

The South Caineville Mesa ACEC encompasses 4,100 acres, located entirely within the Mount Ellen/Blue Hills WSA. The relevant and important value is the relict vegetation found on top of the mesa. The South Caineville Mesa ACEC would not be designated. The management of the Mount Ellen/Blue Hills WSA pursuant to the IMP would provide adequate protection for the relevant and important value of relict vegetation.

Beaver Wash Canyon ACEC

The Beaver Wash Canyon ACEC encompasses 4,800 acres, 99 percent of which is located within the Dirty Devil WSA. The relevant and important value is its desert riparian ecosystem. The Beaver Wash Canyon ACEC would not be designated. The management of the Dirty Devil WSA pursuant to the IMP, along with other decisions for the protection of riparian values and travel management, would provide adequate protection for the relevant and important value of its desert riparian ecosystem.

Gilbert Badlands Research Natural Area ACEC

The Gilbert Badlands Research Natural Area (RNA) ACEC encompasses 3,680 acres located entirely within the Mount Ellen/Blue Hills WSA. The relevant and important value is the badlands geology. The Gilbert Badlands RNA ACEC would not be designated. The management of the Mount Ellen/Blue Hills WSA pursuant to the IMP would provide adequate protection for the relevant and important value of badlands geology.

Badlands Potential RNA ACEC

The Badlands Potential RNA ACEC, which encompasses 88,900 acres of public lands in the Caineville area of eastern Wayne County, includes the existing North and South Caineville Mesa ACECs and Factory Butte. The relevant and important values of the area are scenic, special status plant species, natural processes (wind erosion), riparian, and relict vegetation values. The Badlands Potential RNA ACEC would not be designated. The existing North Caineville Mesa ACEC (2,200 acres) would continue to be designated to protect the relict vegetation relevant and important value. The management of the Mount Ellen/Blue Hills WSA (46 percent of the ACEC) pursuant to the IMP would provide adequate protection for the relevant and important values within that area. Resource decisions related to riparian protection zones, special status species (SSS), and restricting off-highway vehicle (OHV) use to designated routes and a small managed open area would also provide protection to relevant and important values. Cross-country OHV use would continue to be allowed within a portion of the potential ACEC. Although some impact may occur on the relevant and important values of scenery and natural processes (wind erosion) within the OHV open area, the potential for impacts is within a very small portion of the

total ACEC acreage. The demand for the specialized OHV recreation opportunities available at this site and the historic use were considered when making this decision.

Bull Creek Potential ACEC

The Bull Creek Potential ACEC encompasses 4,800 acres of public lands located in Wayne County several miles south of Hanksville. The relevant and important value is cultural resources (archaeological). The Bull Creek Potential ACEC would not be designated. Existing laws, rules, and regulations, as well as management decisions for cultural and travel management, would adequately protect the relevant and important cultural values without designating the area as an ACEC.

Dirty Devil/North Wash Potential ACEC

The Dirty Devil/North Wash Potential ACEC includes the Dirty Devil River and side canyons and totals 205,300 acres. It is located southeast of Hanksville in Wayne and Garfield counties. Relevant and important values are scenic, cultural, paleontological, wildlife (bighorn sheep), and SSS (plant species and the Mexican spotted owl). The Dirty Devil/North Wash Potential ACEC would not be designated. Sixty-four percent of the potential ACEC is within WSAs where management under the IMP would protect all relevant and important values from surface disturbing activities. Existing laws, rules, and regulations, as well as other resource decisions within the Proposed RMP for Visual Resource Management (VRM), fish and wildlife, and travel and minerals management would adequately protect and/or mitigate potential impacts to relevant and important values. The proposed RMP decisions would provide adequate protection to the relevant and important values without designating the area as an ACEC.

Fremont Gorge/Cockscomb Potential ACEC

The Fremont Gorge/Cockscomb Potential ACEC is located on public lands west of Capitol Reef National Park in the Torrey-Teasdale-Grover area of central Wayne County. The potential ACEC totals 34,300 acres. Relevant and important values are cultural, scenic, riparian, plant, and wildlife (mule deer). The Fremont Gorge/Cockscomb Potential ACEC would not be designated. The Fremont Gorge WSA and Fremont Gorge suitable wild and scenic rivers would provide protection within 13 percent of the area. Existing laws, rules, and regulations, and other resource decisions within the Proposed RMP, such as VRM designations, protection of crucial deer habitat from cross-country OHV use and surface disturbance, would provide protection for relevant and important values, reducing or eliminating potential impacts to the potential ACEC. Resource decision included in the proposed RMP would provide adequate protection to the relevant and important values without designation of the area as an ACEC.

Henry Mountains Potential ACEC

The Henry Mountains Potential ACEC is located in the Henry Mountains south of Hanksville and totals 288,200 acres. Relevant and important values are scenic, wildlife (bison and mule deer), SSS (Townsend's big-eared bat, ferruginous hawk, burrowing owl, hole-in-the-rock prairie clover, Dana's milkvetch, Barneby milkvetch), and ecological values (riparian areas and relict vegetation). Forty-five percent of the potential ACEC is within the Mount Hillers, Mount Pennell, and Bull Mountain WSAs, as well as the southern portion of the Mount Ellen/Blue Hills WSA where management under the IMP would protect all relevant and important values from surface disturbing activities. Other resource decisions under the Proposed RMP such as VRM Class I and II, limiting OHV use to designated routes and seasonal/spatial restrictions, would provide adequate protection the relevant and important values of the potential ACEC without designation of the area as an ACEC.

Horseshoe Canyon Potential ACEC

The Horseshoe Canyon Potential ACEC includes Horseshoe Canyon, a tributary to the Green River, and totals 40,900 acres. It is located in northeastern Wayne County. Relevant and important values are scenic, cultural (Cowboy Cave), SSS (Townsend's big-eared bat), and riparian. Ninety-two percent of the potential ACEC is within the Horseshoe Canyon North and Horseshoe Canyon South WSAs where management under the IMP would protect all relevant and important values. Other resource decisions under the Proposed RMP such as VRM Class I and II, travel, and minerals management would provide adequate protection for the relevant and important values of the potential ACEC without designation of the area as an ACEC.

Kingston Canyon Potential ACEC

The Kingston Canyon Potential ACEC encompasses 22,100 total acres of public lands located in the side canyons north and south of the Sevier River between the towns of Kingston and Antimony in Sevier County. Relevant and important values are mule deer, mule deer habitat, and riparian areas. Existing laws, rules, and regulations, as well as management decisions for riparian protection zones, seasonal/spatial restrictions on surface disturbances, and travel management would adequately protect the relevant and important values of the potential ACEC without designation of the area as an ACEC.

Little Rockies Potential ACEC

The Little Rockies Potential ACEC totals 49,200 acres located in the southeast corner of Garfield County. It includes the entire Little Rockies National Natural Landmark—a National Park Service designation. Relevant and important values are scenic, wildlife (bighorn sheep), SSS (Townsend's big-eared bat and hole-in-the-rock prairie clover), and ecological (riparian) values. Seventy-six percent of the potential ACEC is within the Little Rockies WSA. Existing laws, rules, and regulations, as well as management decisions for riparian protection zones, seasonal and spatial restrictions on surface disturbances, non-WSA lands with wilderness characteristics, and travel management, would protect adequately the relevant and important values of the potential ACEC without designation of the area as an ACEC.

Lower Muddy Creek Potential ACEC

The Lower Muddy Creek Potential ACEC, located along Muddy Creek north of Hanksville, totals 16,200 acres of the RFO, with additional acreage to the north in the lands that the Price Field Office manages. The discussion here is limited to the RFO portion. Relevant and important values of this potential ACEC are scenic, SSS (Wright fishhook cactus and Heil's beavertail cactus), and riparian. Existing laws, rules, and regulations, as well as resource decisions within the Proposed RMP for travel and minerals management that limit surface disturbance, would provide adequate protection to the relevant and important values of the potential ACEC without designation of the area as an ACEC.

Old Woman Front Research Natural Area Potential ACEC

The Old Woman Front Research Natural Area Potential ACEC is located in eastern Sevier County, adjacent to the Old Woman Plateau Research Natural Area on the Fishlake National Forest. It encompasses 330 acres. Designating this area as an ACEC would complement the adjacent Forest Service RNA and provide a logical topographical boundary for the area. The relevant and important value of the area is its relict vegetation.

Parker Mountain Potential ACEC

The Parker Mountain Potential ACEC, which totals 107,900 acres, is located in western Wayne County on the Awapa Plateau. Relevant and important values are sagebrush-steppe habitat and SSS (greater sage grouse, Utah prairie dog, and pygmy rabbit). Existing laws, rules, and regulations, as well as management decisions for fish and wildlife, travel, and leasable minerals management, would adequately protect the relevant and important values of the potential ACEC without designation of the area as an ACEC.

Quitchupah Potential ACEC

The Quitchupah Potential ACEC is located in eastern Sevier County along Quitchupah Creek and totals 180 acres. Relevant and important values are cultural resources and riparian values. Existing laws, rules, and regulations, as well as management decisions for riparian protection zones and travel management under the Proposed RMP, would adequately protect the relevant and important values of the potential ACEC without designation of the area as an ACEC.

Rainbow Hills Potential ACEC

The Rainbow Hills Potential ACEC, located just east of Richfield, encompasses the colorful Arapien Shale outcropping. It totals 4,000 acres of public lands. Relevant and important values are mule deer, mule deer habitat, special status plants (Utah phacelia, Arapien stickleaf, Wards penstemon, rainbow rabbitbrush, Sigurd townsendia, and Glenwood milkvetch), and the naturally functioning ecosystem. Existing laws, rules, and regulations, as well as management decisions for fish and wildlife, fire and fuels, and travel management under the Proposed RMP, would provide protection for the relevant and important values of the potential ACEC without designation of the area as an ACEC.

Sevier Canyon Potential ACEC

The Sevier Canyon Potential ACEC, totaling 8,900 acres of public land, encompasses the gorge bordering the Sevier River located between the towns of Marysvale and Sevier. Relevant and important values are mule deer, mule deer habitat, SSS, and riparian areas. Existing laws, rules, and regulations, as well as management decisions for riparian protection zones, fish and wildlife, fire and fuels, and travel management under the Proposed RMP, would provide protection for the relevant and important values of the potential ACEC without designation of the area as an ACEC.

Special Status Species Potential ACEC

The SSS Potential ACEC encompasses documented locations of SSS identified in the evaluations of the various ACEC proposals. In total, this represents 15,100 acres of public lands. Relevant and important values are the following SSS: Winkler pincushion cactus, Wright fishhook cactus, last chance townsendia, Rabbit Valley gilia, Cronquist wild buckwheat, Creutzfeldt flower, Wards penstemon, Basalt milkvetch, Bicknell milkvetch, hole-in-the rock prairie clover, Dana's milkvetch, Barneby milkvetch, Psoralea globemallow, Heil's beavertail, Jane's globemallow, flat-top wild buckwheat, Townsend's big eared bat, Allen's big eared bat, big free-tailed bat, fringed miotis, ferruginous hawk, bald eagle, burrowing owl, long-billed curlew, southwestern willow flycatcher, Williamsons sapsucker, northern goshawk, greater sage grouse, bluehead sucker, flannelmouth sucker, round-tail sucker, leatherside chub, and desert night lizard. Existing laws, rules, and regulations, as well as management decisions for SSS, travel, and minerals management under the Proposed RMP, would provide protection for the relevant and important values of the potential ACEC without designation of the area as an ACEC.

Thousand Lake Bench Potential ACEC

The Thousand Lake Bench ACEC is located in southeastern Sevier County, south of Interstate 70 and east of Thousand Lake Mountain. It is 500 acres, located in several small areas. Relevant and important values are cultural resources, SSS (bald eagle, last chance townsendia, and Wright fishhook cactus), and riparian areas. Existing laws, rules, and regulations, as well as management decisions for riparian protection zones and travel management under the Proposed RMP, would provide protection for the relevant and important values of the potential ACEC without designation of the area as an ACEC.

RELEVANCE AND IMPORTANCE CRITERIA—AREA OF CRITICAL ENVIRONMENTAL CONCERN NOMINATIONS

The Task

The task of evaluating the ACEC nominations was assigned to a subteam of the land use planning interdisciplinary team. The subteam's job was as follows:

1. Identify the potentially relevant values in the nominations.
2. Evaluate the potentially relevant values to determine which, if any, are truly relevant, based on criteria.
3. Evaluate the relevant values to determine if they are important, based on criteria.
4. Identify suggested special management needed to protect relevant and important values.
5. Map the area(s) of relevance and importance. These maps define the potential ACECs that will be considered in the draft environmental impact statement (DEIS).
6. Evaluate existing ACECs to determine if they should be retained, dropped, or modified in the new RMP.

The evaluation was conducted based on guidance in BLM Manual 1613, Areas of Critical Environmental Concern.

1) Identifying Potentially-Relevant Values

The subteam reviewed each of the 26 ACEC nominations to identify potentially relevant values. Only the values identified in the nominations were evaluated for relevance.

2) Determining Relevance

Potentially relevant values were evaluated based on guidance in 43 CFR 1610.7-2, "Designation of Areas of Critical Environmental Concern," and BLM Manual 1613, "Areas of Critical Environmental Concern."

Historical, Cultural, and Scenic Values

A historic or cultural value was determined relevant if the staff archaeologist determined it to be significant.

A scenic value was determined relevant if it was:

- Inventoried as Class A Scenery by the BLM.
- Otherwise judged relevant by the staff visual resource specialist (rationale provided).

Fish and Wildlife Values

The nominated fish and wildlife resource was judged relevant if it or its habitat was documented as present within the nominated area.

Sources of information:

- Utah Natural Heritage Program Database, operated and maintained by the Utah Division of Wildlife Resources (UDWR)
- UDWR habitat maps for game species
- USFWS habitat data maps, recovery plans, and other information
- Staff specialist knowledge (rationale provided).

Natural Processes or Systems

Nominated natural processes or systems (e.g., plants, riparian areas, geologic processes) were considered relevant if they were present within the nominated area and included the following:

- Endangered, sensitive, or threatened plant species (documented occurrences within nominated area)
- Rare, endemic, or relict terrestrial, aquatic or riparian plants, or plants communities (documented occurrences within nominated area)
- Rare geological features.

Sources of information included the following:

- Utah Natural Heritage Program Database, operated and maintained by the UDWR.
- UDWR habitat maps for game species
- USFWS habitat data maps
- Riparian area inventory
- Existing management plans
- Wilderness inventory information
- National Natural Landmark Areas Survey (1980)
- U.S. Geological Survey (USGS) data
- Staff specialist knowledge (rationale provided).

Natural Hazards

Nominations were considered on a case-by-case basis.

3) Determining Importance

Only values determined relevant were evaluated for importance. The value, resource, system, process, or hazard described as relevant usually had to have substantial significance and values to meet the importance criteria.

Significant Qualities

For a relevant resource (or value, system, process, or hazard) to be judged important, it had to have more than locally significant qualities, which gave it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared with any similar resource.

Historic and cultural—A relevant historic or cultural resource was determined more than locally significant if it was:

- Listed on the National Register of Historic Places
- Eligible for listing on the National Register of Historic Places
- Otherwise judged more locally significant as a result of federal laws, regulations, and national BLM policies that mandate consideration and protection of cultural resources.

Scenic—A relevant scenic resource was determined more than locally significant if it was:

- A national, state, or local scenic designation such as state scenic highways, federal scenic highways, and All-American Roads and BLM backcountry byways
- Otherwise judged more locally significant by the staff recreation specialist (rationale provided).

Fish, wildlife, and plant resources—A relevant fish, wildlife, or plant resource was determined more than locally significant if it was a species that was protected under federal law, regulation, and BLM national policy that mandates the consideration and protection of species:

- Special status species, including:
  - Federally listed threatened or endangered species
  - BLM sensitive species
  - State of Utah species of concern
- Endemic to nominated area
- Otherwise judged more than locally significant by staff wildlife biologist (rationale provided).

Riparian resources—All riparian areas were judged more than locally significant by National BLM policy.

Natural hazard—A relevant natural hazard was more than locally significant if staff specialists so determined (rationale provided).

Special Values and Threats

The relevant resource (value, system, process or hazard) was important if it had qualities or circumstances in the nominated area that made it:

- Fragile
- Sensitive
- Rare
- Irreplaceable
- Exemplary
- Unique
- Endangered
- Threatened, or
- Vulnerable to adverse change.

Determinations of special values, threats, and vulnerability to adverse change were made by staff specialists, case-by-case, based on professional knowledge and supporting documentation.

National Priority

The relevant resource (or value, system, process, or hazard) was determined important if it warranted special protection to:

- Satisfy national priority concerns
- Carry out the mandates of FLMPA.

Historic and cultural—Protection of cultural resources is a national priority; therefore, any cultural resource identified as relevant was also determined to be important.

Scenic—A relevant scenic resource that also carried national designations such as federal scenic highways and All-American Roads and BLM backcountry byways was determined important.

Fish, wildlife, and plants—A relevant federally listed threatened or endangered species was also determined important (because of the Endangered Species Act).

Riparian resources—All riparian areas are considered more than locally significant by BLM policy; hence, they meet the importance criteria.

Safety and Public Welfare

A relevant resource (or value, system, process, or hazard) was considered important if it had qualities that warranted highlighting it to satisfy public or management concerns about safety and public welfare.

Threat to Life and Property

The resource (or value, system, process, or hazard) poses a significant threat to human life and safety or property.

4) Special Management

Suggested special management was developed to address, mitigate, or prevent identified threats.

5) Mapping Potential ACECs

Values identified as relevant and important provided a basis for the potential ACECs. Occasionally, the potential ACEC's boundary was the same as the nominated area. In other cases, the boundary of the potential area was somewhat smaller than the nominated area. Yet, in other cases, an identified relevant and important value (e.g., Class A Scenery or crucial bison or mule deer habitat) crossed the boundaries of several nominated ACECs and the potential ACEC then took a new shape and a new name. The potential ACECs will be carried into Alternative C in the DEIS of the RMP. Other alternatives will consider lesser or no acreages for ACEC protection. All will be evaluated in the DEIS.

6) Evaluation of Existing ACECS

Evaluations of the four existing ACECs—Beaver Wash Canyon, Gilbert Badlands, North Caineville Mesa, and South Caineville Mesa—were reconsidered. The relevance and importance values of all were determined to still be valid.

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APPENDIX 2—WILD AND SCENIC RIVER ELIGIBILITY AND TENTATIVE CLASSIFICATION REPORT

On March 1, 2004, the Bureau of Land Management (BLM) released a Wild and Scenic River (WSR) Preliminary Eligibility and Tentative Classification Report for the Richfield Field Office (RFO) for 60 days of public comment. That report identified 13 river segments totaling 155.5 miles as free-flowing and possessing one or more outstandingly remarkable values, making them eligible for further consideration as suitable wild, scenic, or recreational rivers in the Draft Resource Management Plan/Draft Environmental Impact Statement (DRMP/DEIS). The eligibility determinations of two drainages and the determination of the cultural values in seven other drainages were deferred at that time.

The evaluation process began with a BLM interdisciplinary (ID) team inventorying all named drainages crossing public lands within the RFO as depicted on the BLM 1:100,000 scale topographic maps to determine if they were (1) free-flowing[1] and (2) contained any potential outstandingly remarkable values as defined in the WSR Act. The team identified 304 drainages, including multiple segments of the Fremont and Sevier rivers. Also considered were nominations for WSRs submitted as part of scoping for the Richfield Resource Management Plan (RMP) and the earlier—but never completed—Henry Mountain RMP. Thirty-three rivers or river segments were identified as potentially possessing one or more outstandingly remarkable values. The Preliminary Report provides documentation of the process that the ID team used in evaluating the 33 rivers.

Following consideration of the comments on the Preliminary Report and other new information, including field reviews and revised policy guidance, the BLM determined that 12 river segments, totaling 135 miles, have one or more outstandingly remarkable values and are eligible for further consideration in the RMP. Table A2-1 lists the eligible rivers, along with their outstandingly remarkable values. In addition, all river segments and outstandingly remarkable values deferred in the preliminary report are now resolved.

This document tracks changes between the preliminary report and this report. Considerable information exists about the evaluation process in the preliminary report, but it is not repeated here. Copies of the *Wild and Scenic River Preliminary Eligibility and Tentative Classification Report* for the RFO are available online at http://www.blm.gov/ut/st/en/fo/richfield/planning/rmp.html or from the BLM.

Table A2-1. Wild and Scenic River Eligibility and Classification

River or River Segment		Outstandingly Remarkable Value(s)	Tentative Classification	BLM Miles	Total Miles
Dirty Devil Complex	Dirty Devil River	Scenic, recreation, geologic, fish and wildlife, and cultural	Wild	54	57
	Beaver Wash Canyon	Scenic and ecological	Wild	6.8	6.9
	Larry Canyon	Scenic, recreation, wildlife, and ecological	Wild	4	4
Dirty Devil Complex	No Mans Canyon	Scenic, recreation, and cultural	Wild	7.1	7.1

1 "Free-flowing"…means existing or flowing in a natural condition without impoundment, diversion, straightening, rip-rapping, or other modifications of the waterway. The existence, however, of low dams, diversion works, or other minor structures at the time any river is proposed for inclusion in the national WSR system shall not bar its consideration for such inclusion.

River or River Segment		Outstandingly Remarkable Value(s)	Tentative Classification	BLM Miles	Total Miles
	Robbers Roost Canyon	Scenic, recreation, historic, and cultural	Wild	31	33
	Sams Mesa Box Canyon	Scenic and wildlife	Wild	9.5	9.5
	Twin Corral Box Canyon	Scenic and wildlife	Wild	9	10
Fish Creek	Fish Creek	Cultural	Scenic	0.25	0.25
Fremont River	Fremont Gorge	Scenic	Wild	5	6
	Capitol Reef National Park to Caineville Ditch Diversion	Scenic and geologic	Recreational	4	6
Maidenwater Creek	Maidenwater Creek	Scenic, recreation, geologic, fish and wildlife, and ecological	Scenic	3	4
Quitchupah Creek	Quitchupah Creek	Cultural	Recreational	1.4	1.4
Total				**135.05**	**145.15**

COMMENTS ON PRELIMINARY REPORT

Seventy-six comments were received on the preliminary report, categorized as follows:

- **Cooperators:** Comments were received from Emery, Garfield, Sevier, and Wayne counties; Governor's Office of Planning and Budget; State Institutional Trust Lands Administration; and the National Park Service (Capitol Reef National Park).
- **Groups:** Four groups commented: Coloradans for Utah Wilderness, Great Old Broads for Wilderness, Southern Utah Wilderness Alliance (SUWA), and Utah Rivers Council (URC).
- **Individuals:** 63 individuals commented, including guidebook author Steve Allen, geomorphologist Dr. John Dohrenwend, and George and Frances Alderson, a couple from Maryland who specifically traveled to Utah to explore and comment on rivers mentioned in the preliminary report.
- **BLM:** Two RFO employees provided comments on the preliminary report. Several others reviewed the submitted comments and helped develop the BLM position, reflected in the discussion and determinations shown below.

Copies of the comments are available for review at the RFO.

Other New Information

- On June 21, 2004, the Director of the National Landscape Conservation System issued an Instruction Memorandum (IM-2004-196, attached) clarifying BLM's policy with respect to the eligibility criteria for potential WSRs and protective management of identified segments. The IM addressed ephemeral drainages and other issues, including the requirement for outstandingly remarkable values to be river related. It advised caution in applying the free-flowing criteria to

water courses that flow only during flash floods or other circumstances caused by unpredictable events and stated that eligible segments should generally not be ephemeral.
- Following the release of the preliminary report, BLM staff and cooperators field-checked several potentially eligible river segments. Results of those field visits are reflected in this final report.
- BLM management accepted the RFO archaeologist's recommendations for cultural outstandingly remarkable values. These values had been "deferred" in the Preliminary Report over concern they did not rise to the level of being regionally significant.

EVALUATION OF NEW INFORMATION AND ELIGIBILITY DETERMINATION

Note: If no new information was received during the comment period regarding a previously considered river, it is not shown below but is carried forward with no change from the Preliminary Report. As part of their comments, SUWA included a list of drainages they wanted reconsidered as eligible. However, they provided no supporting information by which to evaluate their nominations; hence, eligibility findings regarding those drainages were not reconsidered unless specific comments were provided by others.

Big Hollow

- **Preliminary Report Recommendation:** Deferred (ephemeral).
- **New Information:** IM-2004-196 and statement from BLM Natural Resource Specialist Doug Thurman, "There is only ephemeral flow in this hollow."
- **Discussion:** The interdisciplinary team identified Big Hollow on Parker Mountain as a potentially eligible WSR because of its importance as a raptor migratory route and foraging and nesting area; however, it was deferred because it is an ephemeral drainage.
- **Determination:** Not eligible because it is ephemeral, per IM-2004-196.

Bullfrog Creek and North Fork Bullfrog Creek (including Muley Creek)

- **Preliminary Report Recommendation:** Both creeks were nominated for scenic, recreation, geologic, cultural, and ecological outstandingly remarkable values but found not eligible.
- **New Information:** John Dohrenwend: "In its lower reaches, Bullfrog Creek has carved a narrow canyon nearly 1,000 feet deep into surrounding high plateaus. This canyon is overlooked by the Stratton Road (part of the Burr Trail) that affords continuous opportunities to view and enjoy the heart of the plateau. I would rank this road as one of the most breathtaking (yet easily accessible) touring opportunities in the United States. From a geologic perspective, it is difficult to name an area having better examples of the landforms that distinguish the canyon country of the [Colorado] Plateau… In summary, I find the assessment of 'not eligible, no outstanding value' to be completely unsupportable."
- **Discussion:** The landforms discussed are not part of the Bullfrog Creek drainage, nor were they formed by the same. The road is well away from the drainage and has nothing to do with it. Bullfrog Creek Canyon is narrow and deep, but this is not rare within the region. Although the Stratton Road overlooks Bullfrog Creek in places, the recreational activity is not within the river corridor, and it is not river related. Very little recreational activity occurs within the canyon itself, other than some hiking activity originating within Glen Canyon National Recreation Area (NRA) and possibly extending onto the BLM portions of the canyon. Bullfrog Canyon and Upper Muley/Bullfrog were both given Class B Scenery ratings as part of the Visual Resource Management (VRM) Inventory.
- **Final Decision:** Not eligible. No values were determined to be outstandingly remarkable.

Dirty Devil Complex

Dirty Devil River

- **Preliminary Report Recommendation:** Eligible for scenic, recreation, geologic, and fish and wildlife values.
- **New Information:** More comments were received about the Dirty Devil River and its tributaries than all other rivers within the RFO boundary combined. Emery, Wayne, and Garfield counties questioned the determination of several "outstandingly remarkable values," notably scenery and recreation. Garfield County stated, "Scenery in the drainage was similar to cliffs and rock stands throughout the area"; Emery County wrote, "Considering the region of comparison is the Colorado Plateau, neither contrast of sandstones nor vegetative diversity are unique or outstandingly remarkable"; and Wayne County stated that it "does not agree that the Dirty Devil Complex meets the standard for scenic outstandingly remarkable values." However, people who had visited the canyon wrote about it in glowing terms. John Cederquist stated, "This resource is an amazing one, offering very unique opportunities for scenic value, personal reflection, healthy physical activities, challenge, and connection with very rare cultural values." Curtis Anderson said, "The Dirty Devil offers outstanding beauty and wilderness. The geology is magnificent." These comments were typical of those who support the eligibility determination. BLM staff from the state and field offices hiked the Dirty Devil and several of its side canyons in April 2004 and agreed with the interdisciplinary team that the river has many outstandingly remarkable values.
- **Discussion:** No evidence was brought forth that convinced us to change our determinations from the preliminary eligibility report. The interdisciplinary team continues to believe that this river is outstandingly remarkable for all the values identified, even when compared with other rivers within the Colorado Plateau.
- **Determination:** Eligible for scenic, recreation, geologic, fish and wildlife, and cultural outstandingly remarkable values.

Beaver Wash Canyon

- **Preliminary Report Recommendation:** Eligible for scenic and ecological outstandingly remarkable values.
- **New Information:** George and Frances Alderson said, "We visited this river May 10. We believe that wildlife values of Beaver Wash should be considered 'outstanding' in your study, reflecting the presence of beaver, bighorn sheep, and Mallard ducks…" In the arid Colorado Plateau, a breeding population of Mallards is unusual. BLM Natural Resource Specialist Doug Thurman stated, "I checked color infrared air photos, which clearly show riparian vegetation the entire length of the canyon."
- **Discussion:** The values mentioned by the Aldersons are best addressed by the ecological outstandingly remarkable value.
- **Determination:** Eligible for scenic and ecological outstandingly remarkable values.

Buck and Pasture Canyons

- **Preliminary Report Recommendation:** Not Eligible.
- **New Information:** Steve Allen said, "The BLM flat missed the boat with not recommending these canyons for Wild and Scenic designation. With the comment that there are outstanding values, it becomes apparent the BLM personnel either never walked the canyons or did so with blinders on…" Allen comments support scenic, ecological, and recreation outstandingly remarkable values.

- **Discussion:** These canyons are ephemeral drainages.
- **Determination:** Not eligible because they are ephemeral, per IM-2004-196.

Fiddler Cove Canyon

- **Preliminary Report Recommendation:** Deferred (ephemeral).
- **Discussion:** The interdisciplinary team identified multiple outstandingly remarkable values: scenic, geologic, wildlife, cultural, and ecological. However it is an ephemeral drainage.
- **Determination:** Not eligible because it is ephemeral, per IM-2004-196.

Happy Canyon

- **Preliminary Report Recommendation:** Eligible for scenic and recreation outstandingly remarkable values.
- **New Information:** Doug Thurman, BLM Natural Resource Specialist noted, "…flows are ephemeral in this canyon. There may be a few small seeps but in no way is the flow intermittent. I have talked with a member of our staff who has been up Happy Canyon several miles from the bottom and saw no evidence of riparian vegetation or intermittent flow. I have studied our color and color infrared aerial photographs, which show a very dry canyon with no riparian vegetation."
- **Discussion:** Happy Canyon is ephemeral.
- **Determination:** Not eligible because it is ephemeral, per IM-2004-196.

Hatch Canyon

- **Preliminary Report Recommendation:** Not eligible.
- **New Information:** Steve Allen said, "The BLM write-up reminds me of a famous quote, 'if you've seen one redwood tree, you've seen them all…. This canyon is part of the famous and oft-used 'Outlaw Trail'…. Zane Grey wrote about the area in his novel, *Robbers Roost,* as did Louis L'Amour in…*Sunset Pass*. One reason to designate this canyon as Wild and Scenic is to truncate illegal off-road vehicle use.… … there are only a couple of other canyons that the bighorn frequent in this area…. With such a small area being used by bighorn … I would think that any canyon and water source they use or could use would be critical."
- **Discussion:** In response to Mr. Allen's comments, BLM specialists wrote, "…when looking at this as regionally significant or outstanding, we have better. There is very little variation or rarity. It is not biologically diverse." The off-highway vehicle (OHV) use is a compliance issue rather than a designation issue as the area is already part of a wilderness study area (WSA).
- **Determination:** Not eligible. No values were determined to be outstandingly remarkable.

Larry Canyon

- **Preliminary Report Recommendation:** Eligible for scenic, recreation, wildlife, and ecological outstandingly remarkable values.
- **New Information:** Steve Allen said, "BLM did an excellent evaluation of Larry Canyon."
- **Discussion:** Thanks, Steve.
- **Determination:** Eligible for scenic, recreation, wildlife, and ecological outstandingly remarkable values.

No Mans Canyon

- **Preliminary Report Recommendation:** Eligible for scenic and recreation outstandingly remarkable values; deferred cultural outstandingly remarkable value.
- **New Information:** Steve Allen said, "A constructed stock trail dating back to the early days takes one out of the canyon and to Robbers Roost country."
- **Discussion:** The new information supports the preliminary eligibility determination.
- **Determination:** Eligible for scenic, recreation, and cultural outstandingly remarkable values.

Robbers Roost Canyon

- **Preliminary Report Recommendation:** Eligible for scenic, recreation, and historic outstandingly remarkable values; deferred cultural outstandingly remarkable value.
- **New Information:** Steve Allen stated, "Over the past 10 years canyoneers have come to recognize that the upper ends of each of the Robbers Roost tributaries contain superb opportunities for technical slot canyoneering…"
- **Discussion:** The new information supports the preliminary eligibility determination. The cultural value is no longer "deferred" and is accepted.
- **Determination:** Eligible for scenic, recreation, historic, and cultural outstandingly remarkable values.

Sams Mesa Box Canyon

- **Preliminary Report Recommendation:** Eligible for scenic and wildlife outstandingly remarkable values.
- **New Information:** Steve Allen said, "High walls, a variety of sandstones and formations, and an intermingling of colors from the brown/red/purple/grays of the Chinle to the sweep of the Wingate make this canyon a textbook example of the formations that make up the Glen Canyon group…."
- **Discussion:** BLM's geologist responded, "The Chinle and Wingate are by no means rare in the region, nor are the Navajo Sandstone and Kayenta formations."
- **Determination:** Eligible for scenic and wildlife outstandingly remarkable values.

Twin Corral Box Canyon

- **Preliminary Report Recommendation:** Eligible for scenic and wildlife outstandingly remarkable values.
- **New Information:** Steve Allen: "…the upper part of the canyon, which forms a deep, narrow slot or defile, is now a popular goal for canyoneers. It has been written up in at least one BLM guidebook and on several websites."
- **Discussion:** Although some recreation activity is occurring, it is low compared with other locations in the area, or even other canyons in the upper part of the Dirty Devil drainage. Access is difficult and mostly of a technical nature.
- **Determination:** Eligible for scenic and wildlife outstandingly remarkable values.

Fish Creek

- **Preliminary Report Recommendation:** Deferred for cultural outstandingly remarkable value.
- **Discussion:** The cultural values are no longer "deferred" and are now accepted as outstandingly remarkable.
- **Determination:** Eligible for cultural outstandingly remarkable values.

Fremont River Segments

Below Mill Meadow Dam

- **Preliminary Report Recommendation:** Eligible for recreation and fish and wildlife outstandingly remarkable values.
- **Discussion:** Comments reflected that this segment below the Mill Meadow Dam is all but dewatered from October through May each year and again for a 2-week period each summer, thus not meeting the definition of "free-flowing"—that is, flowing in natural condition.
- **Determination:** Not eligible (not free-flowing).

Fremont Narrows

- **Preliminary Report Recommendation:** Not eligible.
- **New Information:** BLM Hydrologist Phil Zieg noted that the channel in this segment has been restored and rehabilitated—including gabions, potholes, and protective fencing—and that it provides substantial wildlife and waterfowl habitat. However, irrigation practices completely dewater the segment during June, July, and August each year.
- **Discussion:** Because the stream course has been significantly modified and the stream is dewatered annually for upstream irrigation, this segment does not meet the definition of "free-flowing"—that is, flowing in natural condition.
- **Determination:** Not eligible (not free-flowing).

Fremont Gorge

- **Preliminary Report Recommendation:** Eligible for scenic and fish and wildlife outstandingly remarkable values.
- **New Information:** Wayne County disagreed that this segment was any more outstandingly remarkable than numerous similar landscapes throughout the Colorado Plateau and that the fish and wildlife outstandingly remarkable value should not be based on "potential habitat." The National Park Service (NPS) noted that geology was not identified as an outstandingly remarkable value and stated, "We disagree with the latter assessment. First, it is the exposed geology that creates the scenic appeal of the gorge. Second, the Permian and Triassic layers exposed in the gorge span nearly 100 million years of geologic time. And third, the Cutler Formation and Kaibab Limestone that are exposed in the gorge are relatively rare in the region…" The Aldersons said, "We visited this river on May 11 and we agree with BLM's conclusion that is has outstanding…values. It forms a corridor contiguous to Capitol Reef National Park and is a valuable route for recreational hiking between the park and Route 12 near Torrey."
- **Discussion:** The BLM inventoried the Fremont Gorge as Class A Scenery, so we stand by the scenic outstandingly remarkable value. "Potential" habitat appears insufficient to stand as an outstandingly remarkable value, so that is dropped. A BLM geologist disagrees with NPS that the geology in the Fremont Gorge is an outstandingly remarkable value, stating, "In terms of geologic time, 100 million years is not a long time and many canyons within the region will span as much or more time. BLM also disagrees that Permian Cutler Group rocks crop out extensively just to the southeast of the RFO and by no stretch of the imagination are the Kaibab Formation and Cutler Group rare. They may form less than 1 percent of the exposed rocks in the RFO, but they are found in the subsurface throughout the region."
- **Determination:** Eligible for scenic—but not geologic or fish and wildlife outstandingly remarkable values.

Below Capitol Reef NP to Caineville Ditch Diversion

- **Preliminary Report Recommendation:** Not eligible.
- **New Information:** Wayne County agrees with the preliminary determination that this stream segment is not eligible. The NPS commented that it disagreed with the determination that scenic and recreational values were not outstanding: "A significant length of this river segment parallels Utah 24, the main east-west route through the county and the access route to Capitol Reef National Park by visitors traveling from the east. The Class A scenery that is viewed by travelers view on this route is notable, scarce, and exemplary simply by virtue of its free-flowing and perennial character. Similar opportunities are rare in the high desert of Southern Utah. In the neighborhood of 700,000 visitors travel to Capitol Reef National Park each year, many of whom enter or leave the park along this stretch of the river…To say that this segment of river attracts little recreational use imposes a narrow and inaccurate definition of what the public perceives as recreation.…" NPS also took exception to the statement in the Preliminary Report that the Flannelmouth sucker, bluehead sucker, and speckled [dace]—all candidate threatened and endangered species—are prevalent throughout the Western United States. Said NPS, "…if they're threatened and endangered here, they aren't likely to be prevalent anywhere. Therefore, the analysis that the fish and wildlife values are not outstanding needs revision." Geomorphologist Dr. Dohrenwend wrote, "Geomorphologically speaking, the canyon of the Fremont River between Capitol Reef National Park and Caineville Mesas is one of the most unusual canyons on the Colorado Plateau, indeed one of the most unusual canyons in all of North America. Along this entire reach, the canyon is constrained between high, multiple terraces that are capped by thick boulder gravels of early to middle Pleistocene age … what is unusual … about these terraces is that they cap the highest land (ridges, buttes, and mesas) between Capitol Reef National Park and the Caineville Mesas. That is to say, the high mesas and ridges of this area were not so long ago the lowest valley bottom in this rapidly evolving landscape. In geomorphological parlance, this situation is termed an absolute topographic inversion, and such extreme examples of this situation are very rare…. Moreover, the scenery in this region is rated as Class A. Much of the canyon is cut into the highly photogenic Brushy Basin member of the Morrison formation and numerous examples of large balanced rocks are perched along the canyon walls. For these reasons, it is clear that this reach of the Fremont River should be classified as highly scenic and unusual."
- **Discussion:** In response to the Park Service comments, BLM specialists replied, "We acknowledge that the scenery along this reach is Class A; however, we respectfully disagree with the Park Service that it is notable, scarce, or exemplary in the region. Traveling Highway 24 to and from Capitol Reef National Park is not a river-related recreational activity. These visitors are not being drawn by the river but simply traveling through to other destinations (notably Capitol Reef National Park itself)." The statement that the listed fish species are "prevalent throughout the West" [Western United States] was documented in a conversation between BLM's wildlife biologist and a U.S. Fish and Wildlife Service (USFWS) fisheries biologist. The BLM geologist did not respond to Dr. Dohrenwend's comments. Given the disparity in professional opinion and in the interest of continuing the dialogue, BLM acknowledges that the scenery, which is inventoried as Class A, and the geology meet the criteria for outstandingly remarkable.
- **Determination:** Eligible for scenic and geologic outstandingly remarkable values.

Horseshoe Canyon

- **Preliminary Report Recommendation:** Eligible for scenic and geologic outstandingly remarkable values.
- **New Information:** Wayne County "disagrees that this area is any more outstandingly remarkable than numerous similar landscapes found throughout the [Colorado] Plateau." In regard to geologic outstandingly remarkable value, Wayne County is "unconvinced that the length of the

canyon…elevates the canyon to outstandingly remarkable value status." Regarding BLM's claim in the Preliminary Report that Horseshoe Canyon is the "…longest and most extensive side canyon of the Green River," Dr. Dohrenwend wrote, "Actually, this is not a correct statement. Many tributaries of the Green River are much longer and much more extensive. This statement only applies to those tributaries within the Richfield District." BLM Natural Resource Specialist Doug Thurman wrote, "I know there is some intermittent flow in Horseshoe Canyon, but that is within the National Park… I know of no intermittent or perennial flow in this canyon outside the Park unless there is some in the very lower end in Emery County… I have personally walked several miles of the dry canyon bottom and saw no riparian vegetation along the canyon bottom. I also talked with a staff member who has been in other parts of the canyon, and he says it has only ephemeral flow. I have studied the recent color and color infrared aerial photographs, and they do not show evidence of riparian vegetation except at the heads of some canyons where there are springs and seeps. These springs and seeps do not flow down the canyon." (The aerial photos were included as part of the comments.)

- **Discussion:** The stream is ephemeral.
- **Determination:** Not eligible because it is ephemeral, per IM-2004-196.

Maidenwater Creek

- **Preliminary Report Recommendation:** Eligible for scenic, recreation, geologic, fish and wildlife, and cultural outstandingly remarkable values.
- **New Information:** Garfield County disagreed with the preliminary eligibility finding, noting that the vegetation (hanging gardens) is not dependent on a "river" but on a water source that is several feet above the canyon floor. Garfield County concluded, "Maidenwater Canyon was completely dry and appeared to be totally dependent on irregular precipitation events, failed to demonstrate outstandingly remarkable values, and failed to demonstrate any more than locally significant value…."
- **Discussion:** Of the side canyons along State Highway 276, Maidenwater is the most visited by recreationists and used by several commercial permittees. It is not unusual to frequently see vehicles parked at the trailhead for this canyon in both spring and fall. Although the upper drainage was dry during the drought, most years there is water in both the upper and lower sections and the stream is considered intermittent. The water flow is dependable enough that ID team members have observed fish in the lower part of the canyon for over a decade. It is within an area inventoried as Class A Scenery. Maidenwater was one of few creeks that the ID team unanimously supported as "outstandingly remarkable."
- **Determination:** Eligible for scenic, recreation, geologic, fish and wildlife, and cultural outstandingly remarkable values.

Muddy Creek

- **Preliminary Report Recommendation:** Not eligible.
- **New Information:** Several commenters, including the Utah Rivers Council, provided information purportedly supporting outstandingly remarkable values of Muddy Creek. However, in conversations and e-mail exchanges, it became clear that all were referencing portions of Muddy Creek in the San Rafael Swell upstream from the portion that the RFO was considering.
- **Discussion:** We uncovered no new information supporting any outstandingly remarkable value along the Muddy Creek segment within the RFO.
- **Determination:** Not eligible.

North Wash

- **Preliminary Report Recommendation:** Listed but not nominated as eligible.
- **New Information:** Steve Allen stated, "This is an incredible opportunity for the BLM to bring more attention to a great canyon to the many thousands of visitors who drive through the canyon every year… this canyon really does have it all. It could be a BLM poster child for a new type of Recreational River that is not just available to river runners." Nominated for recreation, cultural, historic, and geologic values.
- **Discussion:** Although North Wash has been neither dammed nor impounded, the section along Highway 24 has been straightened, rip-rapped, and heavily manipulated to accommodate a major highway. Blasting of sidewalls occurred in many places, and the canyon does not exist in its natural conditions. Given this, it does not meet the definition of "free-flowing" and cannot be considered eligible as a WSR.
- **Determination:** Not eligible.

Pine Creek

- **Preliminary Report Recommendation:** Eligible for fish and wildlife (Colorado cutthroat trout) and ecological (relict vegetation) outstandingly remarkable values.
- **New Information:** BLM and Forest Service specialists and state and county cooperators field hiked portions of Pine Creek in June 2004. Observations did not support the earlier determination of either ecological (relict vegetation) or fish (Colorado cutthroat) outstandingly remarkable values. The stream banks have been logged in the past and grazed recently, belying the claim of relict vegetation, and there were no indications of fish of any kind.
- **Discussion:** Although certainly a scenic and pleasant creek, none of Pine Creek's values rose to the level of outstandingly remarkable.
- **Determination:** Not eligible.

Pleasant Creek

- **Preliminary Report Recommendation:** Deferred (cultural outstandingly remarkable value).
- **New Information:** The portion of Pleasant Creek considered in the Preliminary Report constitutes 1.4 miles immediately downstream from Capitol Reef National Park. The National Park Service had determined the segment of Pleasant Creek within the Park was eligible as a WSR, and in the Preliminary Report the BLM presumed its section was similar in character to the Park's section. However, recent discussions with the Park Service revealed that the entire flow of the creek is seasonally diverted into an irrigation ditch that predates the Park and serves private land, leaving the BLM portion bone dry throughout the summer.
- **Discussion:** Because the BLM section of Pleasant Creek is dewatered by a man-made diversion, it does not meet the definition of free-flowing and cannot be considered eligible.
- **Determination:** Not eligible.

Poison Springs Canyon

- **Preliminary Report Recommendation:** Listed but not nominated as eligible.
- **New Information:** Nominated for cultural, historic, geologic, ecological, and recreation values by Steve Allen: "Cultural: This canyon has a host of rock art panels, with at least one dating from the Desert Culture era. Fremont Native Americans left behind extensive rock panels, cave sites, lithic scatters, and other evidence of their passage. I do not know if an archaeological survey of this canyon has been done. Historic: Poison Spring Canyon, along with nearby Hatch Canyon,

was part of the famous and historic 'Outlaw Trail' that cut across the Dirty Devil River and was in use from the 1870s to early 1900s. Cowboys use the canyon for grazing and for water and several constructed stock trails across the canyon…Cowboys over the years have left their inscriptions in many places along the canyon walls… Geologic: At Highway 95, Poison Spring Canyon starts its slow descent to the Dirty Devil River [and] at one point is in the Carmel Formation with occasional Entrada Sandstone exposures. As the creek descends, it goes through the Carmel, Navajo, Kayenta, Wingate, Moenkopi, and enters the Chinle formation at the river. These formations and sandstones provide a colorful backdrop to the small stream and attendant riparian area that is found throughout the canyon. Ecological: Green. Green. Green. This well watered canyon hosts a large variety of trees, shrubs. A healthy riparian area runs through most of the canyon, attracting everything from mammals such as deer, coyotes, and ringtail cats (in Adobe Swale) to a large variety of bird life. Recreation: The BLM is aware of the high (for this area) numbers of people going down Poison Spring Canyon. Most are there for day trips and, from my experience, they tend to just poke around looking for rock art, picnicking by the stream, or otherwise simply driving down the canyon and viewing scenery from their vehicles. The more adventurous go as close to the Dirty Devil as their vehicles allow and then hike up Happy Canyon and its superlative narrows… Hikers visit the several large side canyons…it seems there are always footprints in these canyons."

- **Discussion:** The ID team discussed this canyon at length and although it is interesting, it is not eligible for two reasons: (1) Only a small portion of the canyon has reliable water flow and the upper and lower portions of the canyon are ephemeral, and (2) the road down the canyon is in the streambed for large sections and crosses the wash numerous times in areas where it is out of the streambed. The road does not parallel the streambed or crosses it only occasionally. The road is the streambed. This seems inconsistent with WSR values. Also, the geological values are not outstandingly remarkable because many canyons are within the region where down-cutting has exposed several formations. The exposures in Poison Springs Canyon are not rare for the region, nor are they particularly outstanding from a geological standpoint.
- **Decision:** Not eligible because of the road in the drainage and much of the drainage being ephemeral.

Quitchupah Creek

- **Preliminary Report Recommendation:** Deferred (cultural).
- **New Information:** Sevier County: "We strongly believe this small creek should not receive any further consideration as a WSR for several reasons. This small waterway also has several developments near it, including a county road, electricity power line, fencing, and a ranching operation. Other than a very small amount of winter snow runoff, the water in this creek is pumped from an underground coalmine operation, thus making it a man-made waterway… There is existing water diversions for irrigation and other man-made structures… …there is virtually no way this creek will ever meet the eligibility and suitability standards. We feel this proposal was nominated solely to delay a proposed road project and try to discourage the applicants of that road project. If we are right, this is a gross misuse of the process." Emery County: "Cultural values as described are not directly attributable nor exclusively dependent upon existence of the creek and therefore do not make the segment eligible for wild and scenic river designation. Emery County does not think this segment qualifies as eligible."
- **Discussion:** Most of the counties' concerns are "suitability" rather than "eligibility" issues. Regarding Emery County's comments on cultural resources, BLM's archaeologist responded: "That people are dependent on water for their existence is an obvious and oft demonstrated keystone of the human experience. To imply that such is not true for Quitchupah is an unfounded and groundless position. Were there no water in Quitchupah, the cultural values would

undoubtedly not be present." There is probably no other stream within the RFO boundary where the evidence for cultural and Native American values is stronger than Quitchupah Creek.
- **Determination:** Eligible for cultural outstandingly remarkable value.

Salt Wash

- **Preliminary Report Recommendation:** Nominated for scenic, recreation, fish and wildlife and geologic outstandingly remarkable values; found not eligible.
- **New Information:** Nominated for geologic values by Dr. Dohrenwend: "The valley of Salt Wash is a classic example of a curvilinear strike valley; and this particular example wraps around the southern margin of an even more classic and unusual doubly plunging anticline (locally and internationally known as the San Rafael Swell—unquestionably the most scenic and spectacular structural dome in the United States). The upstream two-thirds of this valley is floored in Entrada Formation, flanked on the north by a classic dip slope formed on strata of the Carmel Formation, and flanked on the south by cliffs and scarp slopes of the Entrada, Curtis, and Summerville formations. This part of the valley is transversely cut by several NW-SE trending igneous dikes of probable late Tertiary age. These dikes are closely related to similar features (located just east of Cathedral Valley) that have been dated at about 4 [million years]; in addition to being highly photogenic, they are geologically important because they establish the extremely young erosional age of the entire region. The downstream third of the Salt Wash valley is closely confined between (dare I say, classic examples of?) the continuous hogbacks that mark the transition between the San Rafael Swell and Caineville Reef. And by the way, the Salt Wash valley is one of the few locations where large subsequent drainage ways have developed along either structure."
- **Discussion:** None of the features alluded to are river related or within one-quarter mile of the ordinary high water mark on either side of the drainage on the upstream two-thirds of the valley, and this segment may also be ephemeral. The hogbacks on the downstream portion are not river related and subsequent drainage ways along the Caineville Reef and San Rafael Swell are not rare. The majority of the landscape that is mentioned in the new information is well outside the wild and scenic corridor and once in the wash bottom, visitors cannot see these landmarks.
- **Final Decision:** Not eligible, based on evaluation in Preliminary Report and consideration of new information regarding geology.

Trachyte Creek

- **Preliminary Report Recommendation:** Listed but not nominated for eligibility.
- **New Information:** Nominated for ecological, recreation, cultural, historic, and geologic outstandingly remarkable values by Steve Allen: "Trachyte Creek is both beauty and history. Starting high on the flanks of Mount Pennell in the Henry Mountains several small creeks…join near Farmers Knob to become Trachyte Creek. Over its 10-mile run, Trachyte Creek wanders through a beautiful Navajo-walled canyon on its way to Lake Powell. Trachyte is one of the few creeks that actually has a flow all year around on all but the driest years. Because of this, a healthy riparian area has started to develop… Trachyte is slowly becoming a destination for recreationists… Trachyte was an old Fremont Native American route that took them from the Henry Mountains into Glen Canyon… The Native American route was slowly turned into a wagon route by the first non-Native American settlers in the 1870s… This canyon is primarily in Navajo Sandstone… Trachyte is one of the most historically significant creeks in this part of southern Utah."
- **Discussion:** There is no record of any cultural resource inventories or recorded archaeological sites anywhere along Trachyte Creek. Neither the BLM nor the State of Utah has any record of a

historic wagon route in Trachyte. Both prehistoric and historic transportation routes leave some kind of evidence. We know of none. From the standpoint of geology, Navajo-walled canyons are neither rare nor distinctive in this region. Trachyte Creek is not free flowing in the upper section and can be totally dewatered by diversion for private property. Flow would be intermittent at best. The new information states that Trachyte is slowly becoming a destination for recreationists. This statement could be made for almost any canyon on the Colorado Plateau. BLM gets very few inquiries regarding Trachyte Creek. The majority of the use in Trachyte is as a connecting route for loop hikes taking place in the side canyons, primarily Maidenwater Canyon and Swett Creek.

- **Decision:** Not eligible. Values identified are not outstandingly remarkable.

Woodruff Canyon (Little Rockies, Tributary of Trachyte Creek)

- **Preliminary Report Recommendation:** Not identified in Preliminary Report.
- **New Information:** Nominated for ecological, recreation, and cultural values by Steve Allen: "Woodruff Canyon is a forgotten masterpiece. Tucked into a non-descript corner of the Little Rockies area, the canyon deserves attention for its future potential as a prolifically watered canyon that supports a vibrant riparian habitat throughout its length… Ecological: …Access to cattle has now been limited [and] because of this, an abundant riparian habitat has developed throughout much of the canyon… Recreation: This is a canyon that is waiting to be discovered. A gorgeous canyon with good water is not a common find in canyon country. One that is truly lush is also rare… This area, with its big view and great camping, will become popular… Cultural: …With many Fremont and Desert Culture sites in nearby Trachyte Creek and Swett Canyon, it is most likely that this well-watered canyon was also inhabited by the ancients…[The canyon] was used by ranchers, most likely starting in the 1880s when Woodruff started mining in the Henry Mountains at the head of Woodruff Canyon…"
- **Discussion:** There is no record of any cultural resource inventories or archaeological sites in Woodruff Canyon. While habitation here may be likely, there is no record of any at this time. The ranchers have used almost every side canyon in this area and had early ranching headquartered at many of the springs on the south side of Mt. Hillers (e.g., Starr Spring, along Copper Creek). Woodruff is no different from many other areas in this respect. Access for cattle has not been limited except possibly below Highway 276 by natural obstacles (e.g., choke stones, flash flood activity). These natural obstacles can change again through time, opening the area back up. Depending on the water year, Woodruff can be completely dry below Highway 276, except in pools where some water may remain year around. The statement, "This is a canyon that is waiting to be discovered" may or may not prove to be true. Currently, it is not receiving much use because of obstacles and technical aspects in the lower section. BLM gets few inquiries about hiking this canyon.
- **Decision:** Not eligible. Values identified are not outstandingly remarkable.

Classification

The Wild and Scenic River Act identifies three classes of rivers:

- **Wild Rivers:** Rivers or river sections free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.
- **Scenic Rivers:** Rivers or river sections free of impoundments with watersheds still largely primitive and shorelines largely undeveloped but accessible in place by roads.

- **Recreational Rivers:** Rivers or river sections readily accessible by road or railroad that may have some development along their shorelines and that may have undergone some impoundment or diversion in the past.

Each of the 12 eligible river segments was assigned a tentative classification based on the amount of development in the river corridor (see Table A2-1). Congress can change the classifications if and when it adds these rivers to the national system.

COORDINATION WITH OTHER GOVERNMENTS AND AGENCIES

The State of Utah and Garfield, Piute, Sanpete, Sevier, and Wayne counties are all formal cooperating agencies with the BLM in developing the Richfield Resource Management Plan. Emery County, which is a cooperating agency with the Price Field Office, shares a long, common boundary with the Richfield Office and occasionally shares its views regarding cross-boundary issues. In addition, the RFO is coordinating its WSR review with the BLM Price Field Office, the Dixie, Fishlake and Manti-LaSal national forests, and the National Park Service. During scoping, the planning team traveled to the headquarters of the Hopi, Paiute, and Ute tribes and briefed their representatives on the RMP process. This legislation addresses eligibility and suitability concerns.

State Position

The State of Utah position on WSRs is reflected in the Utah Code Section 63-38d-401, adopted in 2004:

- …The state's support for the addition of a river segment to the National Wild and Scenic Rivers System…will be withheld until—
- It is clearly demonstrated that water is present and flowing at all times.
- It is clearly demonstrated that the required water-related value is considered outstandingly remarkable within a region of comparison consisting of one of the three physiographic provinces in the state and that the rationale and justification for the conclusions are disclosed.
- The effects of the addition upon local and state economies, agricultural and industrial operations and interests, tourism, water rights, water quality, water resource planning, and access to and across river corridors in both upstream and downstream directions from the proposed river segment have been evaluated in detail by the relevant federal agencies.
- The rationale and justification for the proposed addition, including a comparison with protections offered by other management tools, is clearly analyzed within the multiple-use mandate, and the results disclosed.
- The conclusions of all studies related to potential additions to the National Wild and Scenic River System…are submitted to the state for review and action by the Legislature and governor, and the results, in support of or in opposition to, are included in any planning documents or other proposals for addition and are forwarded to the United States Congress.

County Coordination

The BLM has identified preliminary eligible WSRs in Garfield, Sevier, and Wayne counties but none in Piute or Sanpete counties (see Table 3, Evaluation of Outstandingly Remarkable Values in the Wild and Scenic River Preliminary Eligibility Report). BLM representatives have discussed the WSR process with all five county commissions. Garfield and Wayne counties include the following language regarding WSRs in their county general plans:

- Garfield County: "Garfield County will, if it deems appropriate, comment on and may develop and submit proposals for Wild and Scenic River designations to the appropriate federal land management agencies." Garfield County also submitted comments on the preliminary evaluation report, which are addressed in the new information section, above.
- Wayne County: "We feel that Wayne County does not have any rivers or streams that qualify for Wild and Scenic River designation. We feel this designation is too restrictive and would interfere with water rights upstream. We do not feel the Fremont River meets the criteria as a Wild and Scenic River because the eastern portion of the river, where it joins the Dirty Devil, has been dry in some summer months." Wayne County also submitted comments on the preliminary evaluation report, which are addressed in the new information section, above. Other county plans are silent on WSRs. Cooperation with the counties will continue. Emery County submitted comments on specific river segments, which are addressed above under new information.

Price Field Office Coordination

The Price and Richfield Field Offices share management of three river corridors nominated as WSRs:

- Horseshoe Canyon: The Price Field Office determined its section of Horseshoe Canyon was tentatively eligible as a WSR; the RFO determined its segment was not. (The Park Service also shares management of this drainage. See below.)
- Quitchupah Creek: The RFO determined its segment of Quitchupah Creek tentatively eligible; the Price Field Office determined its segment not eligible. The two segments are separated by several miles of private land.
- Muddy Creek: The Price Field Office determined its segment eligible; the RFO found no outstandingly remarkable values in its segment. The character of the river changes dramatically between the two field offices.

Forest Service Coordination

- Dixie and Fishlake National Forests: Richfield BLM shares many miles of common boundary with the Dixie and Fishlake national forests. The Dixie and Fishlake are currently revising their forest plans. As part of that effort, they are conducting a WSR evaluation.
- Manti-LaSal National Forest: Richfield BLM and the Manti-LaSal National Forest share common boundaries in parts of Sanpete County. However, neither agency identified segments of eligible (or potentially eligible) rivers crossing that boundary.

Park Service Coordination

As part of its Nationwide Rivers Inventory (NRI), the National Park Service identified free-flowing rivers in Utah with one or more outstandingly remarkable values. NRI rivers in the vicinity of the RFO are as follows:

- Dirty Devil River—Highway 24 bridge to Lake Powell
- Fremont River—Capitol Reef NP segment
- Horseshoe Canyon—Canyonlands NP segment
- Pleasant Creek—Capitol Reef NP segment
- Trachyte Creek—Glen Canyon NRA segment.

The Dirty Devil was the only NRI-identified river segment managed by the Richfield BLM. Other segments identified on national park lands are adjacent to public lands administered by the RFO.

The Park Service provided input on stream segments within and adjacent to national park units. Their input is reflected in the discussions, above.

Tribal Coordination

Discussions with the Hopi, Paiute, and Ute tribes about the RMP disclosed no specific WSR issues. However, the Hopi and Paiute identified cultural resource and other concerns about a proposed coal haul road in Quitchupah Canyon now being analyzed by the Forest Service and BLM.

Wild and Scenic River Eligibility and Tentative Classification Report recommended by:

/s/ *Frank S. Erickson* 03/07/05
Frank Erickson Date
Land Use Planner

Field Manager Concurrence:
I concur with the Wild and Scenic River Eligibility and Tentative Classification Report

/s/ *Cornell Christensen* 03/07/05
Cornell Christensen Date
Field Manager

(signed copy is in the planning records)

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

June 21, 2004

EMS TRANSMISSION 06/22/2004 In Reply Refer To:
Instruction Memorandum No. 2004-196 1610, 8351 (172) P
Expires: 09/30/2005 Ref. MS 8351

To: AFOs
From: Director, National Landscape Conservation System
Subject: Clarification of Policy in the BLM Manual Section 8351, Wild and Scenic Rivers, with Respect to Eligibility Criteria and Protective Management

Program Area: National Landscape Conservation System and Land Use Planning.

Purpose: This Instruction Memorandum (IM) clarifies policy contained in the BLM Manual Section 8351 with respect to the eligibility criteria for potential wild and scenic rivers and protective management of identified river segments.

Background: The Utah State Director requested and received guidance on five issues raised in developing a resource management plan. A summary of those issues is as follows:

1. Interpretation of the Wild and Scenic Rivers Act with respect to whether intermittent or seasonal water courses qualify for designation as WSRs.

2. Incorporation of Washington Office Solicitor's memorandum (11/12/97) and IM 98-129 (6/28/98) into the BLM Manual Section 8351.

3. The dependency of outstanding remarkable values on water flows.

4. Evaluation of outstandingly remarkable values within a region of comparison substantiating why outstandingly remarkable values may be worthy of designation in the National WSR System.

5. Evaluation of the size or length of a segment on the determination of eligibility.

Policy Clarification/Action: This guidance clarifies policy contained in the BLM Manual 8351 and until incorporated into the Manual is applicable to all river segments determined eligible and/or suitable.
As to the first issue, judgment is required in determining eligibility of water courses that are free-flowing and have associated outstandingly remarkable values. As a general rule, the segment should contain regular and predictable flows (even though intermittent, seasonal, or interrupted). This flow should derive from naturally occurring circumstances (e.g., aquifer recharge, seasonal melting from snow or ice, normal precipitation, instream flow from spillways or upstream facilities). Caution is advised in applying the free-flow criterion to water courses that flow only during flash floods or unpredictable events. The segment should not be ephemeral (flow lasting only few days out of a year). Evaluation of flows should focus on normal water years, with consideration of drought or wet years during the inventory.

As to the second issue, the BLM's policy is to protect any outstandingly remarkable values identified in the eligibility determination process to assure a decision on suitability can be made. The Bureau has broad discretionary authority to not impact rivers values or make decisions that might lead to a determination of eligibility. The BLM's policy is to manage and protect the free-flowing character, tentative classification, and identified outstandingly remarkable values of eligible rivers according to the decisions in the associated Resource Management Plan. This protection occurs at the point of eligibility determination so

as not to adversely constrain the suitability assessment or subsequent recommendation to Congress. The BLM may protect river values using the National Environmental Policy Act (NEPA) and the Federal Land Policy and Management Act. WSR issues involving NEPA supplementation are the same as for other resource values. When the BLM considers a proposal that could constitute a major federal action that significantly affects the quality of the human environment, the Council on Environmental Quality regulations requires NEPA compliance before the BLM can act on the proposal (40 CFR 1506.l). Eligible river segments determined to be nonsuitable through a land use plan (LUP) decision are subject to the direction and management decisions contained in the LUP.

As to the third issue, qualifying outstandingly remarkable values should be limited to those that are directly river related. That is, they should be located in the river or on its immediate shorelands, contribute substantially to the functioning of the river ecosystem, and/or owe their location or existence to the presence of the river. Again, judgment is required in applying this criterion. Additional guidance regarding this issue is contained in a technical report of the Interagency WSR Council, at www.nps.gov/rivers/publications entitled, *The Wild and Scenic River Study Process*, December 1999.

As to the fourth issue, qualifying outstandingly remarkable values should be located in the river or on its immediate shorelands, contribute substantially to the functioning of the river ecosystem, and/or owe their location or existence to the presence of the river. The publication referenced above provides additional information on page 12.

The Director addressed the fifth issue on December 3, 1993. Jurisdictional and management constraints are not a consideration in determination of a river's eligibility for designation as WSRs. These types of issues are addressed in the suitability phase of WSR studies (Manual Sections 8351.24A and 8351.33A.1-8).

State Directors should review and update any existing State and Field Office policies and make necessary modifications to comply with the terms of this IM. In addition, based on experience with resolving protest, appeals, and litigation, any interagency agreements and memorandums of understanding which amend or supplement the BLM Manual Section 8351 need concurrence of the Director to assure consistent application of the criteria and process as outlined in this IM.

Time Frame: This policy is effective immediately.

Budget Impact: It is not anticipated that implementation of this policy would result in any significant increase in cost to field offices. Any costs will be covered within existing State Office base allocations.

Manual Section Affected: Bureau Manual 8351—Wild and Scenic Rivers—Policy and Program Direction for Identification, Evaluation, and Management—Releases 8-61 and 8-62, dtd 5/19/92 and 12/22/93; Sections 8351.06D; 8351.31B; 8351.32C; 8351.33A.

Coordination: This policy has been coordinated with the Interagency WSR Coordinating Council, Departmental Solicitor, BLM's Directorate, WO-200 and WO-300.

Contact: Please address any questions and concerns regarding this policy to Gary G. Marsh, National Rivers Coordinator, National Landscape Conservation System Office, Wilderness, Rivers, and National Trails Group, WO-172, (202) 452-7795.

Signed by:
Elena C. Daly
Director, National Landscape Conservation System

Authenticated by:
Barbara J. Brown
Policy and Records Group, WO-56

APPENDIX 3—WILD AND SCENIC RIVER SUITABILITY RECOMMENDATIONS

This Proposed Resource Management Plan (RMP) makes Wild and Scenic River (WSR) suitability recommendations pursuant to Section 5(d)(1) of the WSR Act. WSR designations are made by Congress or by the Secretary of the Interior upon application of a state governor.

Suitability was the process of determining which if any of the 12 river segments found to be free-flowing and having outstandingly remarkable values in the Wild and Scenic River Eligibility and Tentative Classification Report, Richfield Field Office, March 2005, should be recommended to Congress as additions to the National Wild and Scenic Rivers System (NWSRS). Suitability took into account factors not considered in the eligibility evaluation, such as threats to a river or the need to develop the water for municipal, agricultural, or industrial uses. In addressing these considerations, the benefits and impacts of WSR designation have been evaluated and alternative protection methods considered. Eligibility was based on criteria; suitability was based on judgment.

INTERIM MANAGEMENT

Until a Record of Decision (ROD) is signed for the approved plan, protection of segments found eligible (regardless of suitability finding) would be addressed on a case-by-case basis. This means that whenever any proposed action would affect these outstandingly remarkable values, impacts would be analyzed through the National Environmental Protection Act (NEPA) process, and mitigation and alternatives would be considered to avoid such impacts.

Once a ROD is signed, segments recommended as non-suitable would be dropped from special management and would be managed under the provisions of the RMP. Segments recommended as suitable would be managed for the preservation of outstandingly remarkable values, tentative classifications, and their free-flowing status.

SUITABILITY RECOMMENDATIONS FOR THE PROPOSED RMP/FEIS

The 5 miles of the Fremont Gorge segment (the Fremont River above Capitol Reef National Park) identified in the Preferred Alternative of the DRMP/Environment Impact Statement (EIS) would be considered suitable for inclusion into the NWSRS. The following segments are recommended as non-suitable and would be released from further WSR consideration: Dirty Devil, Beaver Wash Canyon, Larry Canyon, No Mans Canyon, Robbers Roost Canyon, Sams Mesa Box Canyon, Twin Corral Box Canyon, Fish Creek, Fremont River below Capitol Reef National Park to Caineville Ditch Diversion, Maidenwater Creek, and Quitchupah Creek.

SUITABILITY FACTORS ADDRESSED FOR EACH ELIGIBLE RIVER

In addition to resource uses, conflicts, and tradeoffs identified in the analysis of the alternatives, several suitability factors were addressed for each eligible river in this appendix, including:

- The characteristics that do or do not make the area a worthy addition to the NWSRS
- Current status of land ownership and human use of the area

- Uses, including the reasonably foreseeable potential uses of land and water, that would be enhanced, foreclosed, or curtailed if the river were designated into the NWSRS by Congress, and the values that could be lost or diminished if the area is not protected as part of the national system
- Interest by local, state, or federal agencies; Native American tribes; and other public entities in congressional designation or non-designation of the river, and the extent to which river administration, including costs thereof, may be shared by state and local agencies or other potential partners
- The estimated cost to the government of acquiring lands and interests in lands and administering the area if the river is designated into the NWSRS by Congress
- Bureau of Land Management's (BLM) ability to manage and protect the values of the river segment as part of the NWSRS if designated by Congress, and other mechanisms to protect identified values or alternative ways to protect rivers other than through Congressional designation under the WSR Act
- Existing rights that may be adversely affected because of designation into the NWSRS, or other issues or concerns.

Fremont Gorge (Fremont River Above Capitol Reef National Park)

The Fremont Gorge is considered a worthy addition to the NWSRS based on an outstandingly remarkable value of outstanding scenery and is being recommended as suitable with the tentative classification of wild. It is the deepest gorge cutting across the Waterpocket Fold. The scenery is highly diverse and not common to other rivers in the region. There are no human developments, and land use impacts on public lands do not detract from the natural qualities found in the rugged and primitive stretches of the gorge.

This is a free-flowing, perennial segment, although water flows in Fremont Gorge can vary considerably from year to year based on upstream precipitation and upstream water diversions.

Current status of land ownership and human use of the area

The river segment is 5.0 miles in length, all public lands administered by BLM. Public lands within the river corridor support livestock grazing and dispersed activity including hiking, hunting, sightseeing, photography, and other types of primitive recreation. Use levels are low. The only access to the area is along a single, non-maintained vehicle way.

Uses, including the reasonably foreseeable potential uses of land and water, that would be enhanced, foreclosed, or curtailed if the river was designated into the NWSRS by Congress, and the values that could be lost or diminished if the area is not protected as part of the national system

WSR designation would be compatible with BLM proposals to maintain riparian values and protect the watershed and high quality of water. It would help to maintain the important scenic values of the area.

Inclusion into the NWSRS could preclude dams or other water developments within the designated stretch, but no such developments are currently planned. Wayne County interests have proposed water diversion and storage projects for the Fremont River in a variety of locations, including sites upstream and downstream from this location. To date, none of the proposals have moved beyond the idea stage.

Designation would complement management of the eligible river segment within Capitol Reef National Park.

Interest by local, state, or federal agencies; Native American tribes; and other public entities in congressional designation or non-designation of the river, and the extent to which river administration, including costs thereof, may be shared by state and local agencies or other potential partners

Some private citizens and regional and national conservation groups have promoted designation as a means of preserving the free-flowing character and other values of this nationally significant river. No state, tribal, or local government has expressed support for inclusion of the river in the NWSRS. Local and state agencies, water users, and municipalities oppose designation due to perceptions that existing water rights could be affected and opportunities for water development could be foreclosed, not only within the eligible river segment, but also upstream and downstream. In actuality, there is no likely development identified within the eligible segment, and any upstream or downstream development would be affected only if federal money was involved, and even then only if the development would invade or unreasonably diminish fish, wildlife, recreation, or scenic values identified within the designated segment at the time of designation.

Congressional designation of this eligible segment would not preclude consideration of this water diversion and storage project in the future, as long as it would not exceed the "invade or unreasonably diminish" standard discussed above. Although the WSR Act infers a federal reserved water right upon designation, rather than establishing an amount it actually imposes a limit, expressing that any such right is to be the minimum necessary for the purposes of the Act. Such right would have to be adjudicated through the state and would be junior to any existing rights.

Although none of the above entities would share costs, because Capitol Reef National Park has determined the contiguous portion of the river that it manages to be eligible, costs and administration of the river area could be shared with it if Congress were to also designate the portion of the river within its boundaries.

The estimated cost to the government of acquiring lands and interests in lands and administering the area if the river is designated into the NWSRS by Congress

No funding for acquisition would be needed because there is no private land within the river corridor. The initial costs of administration for the first 3 years would involve management plan preparation and implementation. Yearly administration costs thereafter could involve additional studies and monitoring.

The BLM's ability to manage and protect the values of the river segment as part of the NWSRS if designated by Congress, and other mechanisms to protect identified values or alternative ways to protect rivers other than through Congressional designation under the WSR Act

BLM is capable of managing this segment as wild and scenic. Designation of this segment would not significantly elevate management costs above current levels nor require substantial increases in appropriations or diversion of resources from critical ongoing programs. Also, BLM could partner with the National Park Service (NPS) in administering the river.

Alternatives to congressional WSR designation are contained in the Richfield PRMP/FEIS and include land use prescriptions to manage riparian systems, watershed, water quality, and habitats for sensitive and listed fish and wildlife species, including potential Special Recreation Management Area (SRMA) or area of critical environmental concern (ACEC) designations and limiting off-road motorized travel, mining and mineral leasing, and rights-of-way (ROW) development. New costs could be incurred to implement any of these management schemes.

Existing rights that may be adversely affected because of designation into the NWSRS, or other issues or concerns

The lands within the river corridor are public lands administered by BLM. There are no valid mining claims, mineral leases, private lands, or other existing rights within the eligible segment that would be affected by congressional designation.

The WSR Act infers a federal reserved water right upon designation. Any such right would be the minimum necessary for the purposes of the Act, would have to be adjudicated through the state, and would be junior to any existing rights.

Local and state agencies, water users, and municipalities have expressed concern that opportunities for water development could be foreclosed, not only within the eligible river segment, but also upstream and downstream.

The WSR Act infers a federal reserved water right upon designation. However, it does not quantify the right other than to place limitations on it. The Act states that it shall not be construed as a reservation for purposes other than those specified in the Act, or in quantities greater than necessary to accomplish these purposes. The amount of the federal right will therefore depend upon the river's flow, the values for which the river is being protected, and the unappropriated quantities in the river. It would be adjudicated through the state and would be junior to any rights existing prior to the date of designation.

Dirty Devil River Excluding Its Tributaries

Dirty Devil River

This section is recommended non-suitable because the values identified would be protected by alternative protection methods. The entire Dirty Devil segment is within the Dirty Devil and Fiddler Butte Wilderness Study Areas (WSA) or the Dirty Devil SRMA. Approximately 35 miles of this segment are in the Dirty Devil and Fiddler Butte WSAs and 48 miles are in the Dirty Devil SRMA. WSA management through the Interim Management Plan (IMP) and management prescriptions associated with the Dirty Devil SRMA would provide protection to the segment's outstandingly remarkable values. In addition, the BLM land within this segment is Visual Resource Management (VRM) Class I (35 miles) or II (19 miles), which would protect the scenic and other outstandingly remarkable values. The BLM believed that the quality of river characteristics in this segment would not significantly enhance nor contribute to the NWSRS.

Characteristics that do or do not make the area a worthy addition to the NWSRS

Scenery is rated Class A with extremely rugged topography and contrasting variety and color of exposed sandstone layers and vegetation. The Dirty Devil River and its surrounding landscape has been the subject of professional photographers.

Recreational opportunities, including hiking, backpacking, and, on those rare occasions when conditions are right, boating, attract visitors from outside the region. Several guidebooks describe opportunities for backpacking and hiking. The river and surrounding lands provide for commercial use, with trips conducted annually. People are willing to travel long distances to recreate here as indicated by repeat users, commercial operations, and increasing visitation levels despite the area's remoteness and the difficult access.

The Dirty Devil River has exposed eight geologic formations, some of which contain rare paleontological resources within the river corridor.

Habitat for several special status species, including the Mexican spotted owl (MSO), Southwestern willow flycatcher, and yellow-billed cuckoo, is found within the canyon created by the river. There are active Peregrine falcon aeries in cliff habitat above the river. The river corridor provides crucial habitat for big game, neo-tropical migratory birds, non-game mammals, bats, and small rodents.

The river corridor contains multiple sites with evidence of occupation and use by both Desert Archaic and Fremont peoples. Sites span a very long time period, from 5000 BC to 1300 A.D.

This river segment is free-flowing in character and free of impoundments and other intrusions.

Current status of land ownership and human use of the area

The eligible segment totals 57 miles: 54 miles of BLM-administered land and 3 miles of state and private land. There are no plans for acquisition of the private land. The river corridor is undeveloped and primitive and mostly within the Dirty Devil and Fiddler Butte WSAs.

Uses, including the reasonably foreseeable potential uses of land and water, that would be enhanced, foreclosed, or curtailed if the river was designated into the NWSRS by Congress, and the values that could be lost or diminished if the area is not protected as part of the national system

Designation would be compatible with BLM proposals to maintain riparian values, protect the watershed, protect potential habitat for the MSO, and manage the lands for primitive recreation opportunities. However, congressional designation into the national system is not necessary for these goals to be achieved.

Inclusion in the NWSRS could preclude dams or other development including roads, pipelines, or other structures on federal lands within this stretch of river if classified as "wild," but no such developments are proposed.

The Dirty Devil drainage is almost exclusively within the Dirty Devil and Fiddler Butte WSAs. BLM has recommended these lands to Congress for wilderness designation. Adjacent NPS lands are also administratively recommended for wilderness.

Failure to include the Dirty Devil River in the NWSRS would not necessarily diminish the values for which the river was determined eligible inasmuch as the area's WSA status would continue, and many of the other land use prescriptions being considered within the Richfield PRMP/FEIS would also preserve and enhance such values if implemented.

Interest by local, state, or federal agencies; Native American tribes; and other public entities in congressional designation or non-designation of the river, and the extent to which river administration, including costs thereof, may be shared by state and local agencies or other potential partners

Some private citizens and regional and national conservation groups have promoted WSR designation as a means of preserving the free-flowing character of this nationally significant river, and NPS has determined to be eligible the contiguous portion of the river that it manages. No state, tribal, or local governments have expressed support for inclusion of the river in the NWSRS. Local and state agencies, water users, and municipalities oppose designation due to perceptions that upstream water rights and water projects could be adversely affected. No water developments are proposed or likely to be proposed within the eligible segment given that it is immediately upstream from Lake Powell with its huge, and currently underutilized, water storage capacity.

NPS has determined the portion of the river that it manages within the Glen Canyon National Recreation Area (NRA) to be an eligible WSR, so costs and administration of the river area could be shared between BLM and NPS if Congress added the entire Dirty Devil to the NWSRS.

The estimated cost to the government of acquiring lands and interests in lands and administering the area if the river is designated into the NWSRS by Congress

No funding for acquisition is needed because no private land acquisitions are anticipated. State lands could be acquired through exchange. The initial costs of administration would include preparing and implementing a management plan and ongoing recreation permitting. Yearly administration costs thereafter could involve additional studies, monitoring, and ongoing recreation permitting.

The BLM's ability to manage and protect the values of the river segment as part of the NWSRS if designated by Congress, and other mechanisms to protect identified values or alternative ways to protect rivers other than through Congressional designation under the WSR Act

Failure to include Dirty Devil in the NWSRS would not necessarily diminish the values for which the river was determined eligible. BLM currently has little administrative presence on this river. To date, remoteness and difficult access have kept visitation light throughout a significant portion of the year. In addition, the entire Dirty Devil segment is within the Dirty Devil and Fiddler Butte WSAs or the Dirty Devil SRMA. Further, 35 miles of this segment are in the Dirty Devil and Fiddler Butte WSAs and 48 miles are in Dirty Devil SRMA. WSA management through the IMP and the Dirty Devil SRMA management prescriptions would provide protection to the segment's outstandingly remarkable values. BLM land within this segment is also VRM Class I (35 miles) or II (19 miles), which would protect the scenic and other outstandingly remarkable values.

Existing rights that may be adversely affected because of designation into the NWSRS, or other issues or concerns

There are no valid mining claims, mineral leases, or private lands within the public lands portion of the eligible segment. Wayne County and Emery County interests have expressed concern that designation of the Dirty Devil into the NWSRS could affect upstream water rights and water uses on the Fremont River and Muddy Creek, tributaries of the Dirty Devil.

The WSR Act infers a federal reserved water right upon designation. However, it does not quantify the right other than to place limitations on it. The Act states that it shall not be construed as a reservation for purposes other than those specified in the Act, or in quantities greater than necessary to accomplish these purposes. The amount of the federal right will therefore depend upon the river's flow, the values for which the river is being protected, and the unappropriated quantities in the river. It would be adjudicated through the state and would be junior to any rights existing prior to the date of designation.

Dirty Devil Tributaries

Beaver Wash Canyon

This section is recommended non-suitable because the values identified would be protected by alternative protection methods. The segment is located within the Dirty Devil WSA. WSA management through the IMP would provide protection to the segment's outstandingly remarkable values. BLM believed that the quality of river characteristics in this segment would not significantly enhance nor contribute to the NWSRS.

Characteristics that do or do not make the area a worthy addition to the NWSRS

Beaver Wash Canyon is a side canyon and tributary to the Dirty Devil River. The canyon was designated as an ACEC for its high biological and ecological values. Grazing and mineral extraction is not allowed in the river corridor below the canyon rim for resource concerns. The lands are also entirely within the Dirty Devil WSA.

The amount of water present can vary considerably seasonally and from year to year.

Current status of land ownership and human use of the area

The river segment is 6.9 miles in length, including 6.8 miles of public lands administered by BLM and 0.1 mile state land. Grazing is not allowed in the river corridor below the canyon rim. The area has an established hiking trail crossing it from Angel Point Trail head, which provides access into the main Dirty Devil drainage and side canyons. Recreational use includes primitive hiking, canyoneering, camping, and sightseeing for day and extended use trips. Use levels are moderate and increasing.

Uses, including the reasonably foreseeable potential uses of land and water, that would be enhanced, foreclosed, or curtailed if the river were designated into the NWSRS by Congress, and the values that could be lost or diminished if the area is not protected as part of the national system

Designation would be compatible with BLM proposals to maintain riparian values and protect the watershed and high quality of water. However, congressional designation into the national system is not necessary for these goals to be achieved.

Non-designation would leave open the possibility of future water developments that could alter the free-flowing nature of the stream, thus diminishing natural values within public lands and limiting options for habitat enhancements. No such developments or uses are currently proposed, however.

Interest by local, state, or federal agencies; Native American tribes; and other public entities in congressional designation or non-designation of the river, and the extent to which river administration, including costs thereof, may be shared by state and local agencies or other potential partners

Some private citizens and regional and national conservation groups have promoted designation. No state, tribal, or local government has expressed support for inclusion of this river segment in the NWSRS. Local and state agencies, water users, and municipalities oppose designation due to perceptions that existing water rights could be affected and opportunities for water development could be foreclosed, not only within the eligible river segment, but also upstream and downstream. In actuality, there is no likely development identified within the eligible segment, and any upstream or downstream development would only be affected if federal money was involved and if the development would invade or unreasonably diminish fish, wildlife, recreation, or scenic values identified within the designated segment at the time of designation. Although the WSR Act infers a federal reserved water right upon designation, rather than establishing an amount it actually imposes a limit, expressing that any such right is to be the minimum necessary for the purposes of the Act. Such right would have to be adjudicated through the state and would be junior to any existing rights.

There is no opportunity to share costs of administration with the above entities. Also, there is no contiguous federal agency with which to share cost of administration. If the entire watershed of the Dirty Devil River including all of its side canyons is designated, then there is an opportunity for shared administration of the river area with NPS if Congress were to also designate the portion of the river within its boundaries.

The estimated cost to the government of acquiring lands and interests in lands and administering the area if the river is designated into the NWSRS by Congress

No funding for acquisition would be needed because there is no private land within the river corridor. The Utah state-owned lands could be acquired through exchange of lands with other public lands. The initial costs of administration for the first 3 years would involve management plan preparation and implementation. Yearly administration costs thereafter would involve monitoring.

The BLM's ability to manage and protect the values of the river segment as part of the NWSRS if designated by Congress, and other mechanisms to protect identified values or alternative ways to protect rivers other than through Congressional designation under the WSR Act

BLM is capable of managing this segment as wild and scenic. Designation of this segment would not significantly elevate management costs above current levels nor require substantial increases in appropriations or diversion of resources from critical ongoing programs.

Failure to include Beaver Wash Canyon in the NWSRS would not necessarily diminish the values for which the river was determined eligible. The outstandingly remarkable values within this segment could be effectively managed through land use prescriptions contained in the Richfield PRMP/FEIS should congressional designation not occur. The canyon's relevant and important values are currently protected by ACEC designation. Further, the segment is located entirely within the Dirty Devil WSA. WSA management through the IMP would provide protection to the segment's outstandingly remarkable values.

Existing rights that may be adversely affected because of designation into the NWSRS or other issues or concerns

The lands within the river corridor are public lands administered by BLM. There are no valid mining claims, mineral leases, private lands, or other existing rights within the eligible segment that would be affected by congressional designation.

The WSR Act infers a federal reserved water right upon designation. However, it does not quantify the right other than to place limitations on it. The Act states that it shall not be construed as a reservation for purposes other than those specified in the Act, or in quantities greater than necessary to accomplish these purposes. The amount of the federal right will therefore depend upon the river's flow, the values for which the river is being protected, and the unappropriated quantities in the river. It would be adjudicated through the state and would be junior to any rights existing prior to the date of designation.

Larry Canyon

This section is recommended non-suitable because the values identified would be protected by alternative protection methods. The segment is located within the Dirty Devil WSA. WSA management through the IMP would provide protection to the segment's outstandingly remarkable values. BLM believed that the quality of river characteristics in this segment would not significantly enhance nor contribute to the NWSRS.

Characteristics that do or do not make the area a worthy addition to the NWSRS

Larry Canyon is a tributary side canyon to the Dirty Devil River. The canyon is rated Class A scenery. Long technical slots in the upper canyon and natural pour-offs in the lower end hinder access and have kept the middle portion in pristine condition. Cottonwood trees complement the form, line, color, and texture of the canyon walls and shade much of the canyon floor.

Larry Canyon provides one of the main hiking entries into the Dirty Devil River canyon system from the west. These public lands provide a significant part of the regional recreation opportunity, serving as a gateway to the Dirty Devil River. People are willing to travel long distances to use the recreational opportunities within Larry Canyon and other canyons of the Dirty Devil River drainage, as indicated by increasing visitation levels despite lengthy and difficult access. Several guidebooks describe outstanding opportunities for hiking, backpacking, and canyoneering, and there are opportunities for commercial use. There are challenging canyoneering opportunities in the upper stretch of Larry Canyon.

Long stretches of perennial springs within this canyon provide diverse habitats for native plants and support a great variety of bird and animal species. These include the MSO (federally listed) and the goshawk and Peregrine falcon, both sensitive species. This canyon is designated critical MSO habitat. The riparian corridor provides crucial habitat for big game, neo-tropical migratory birds, non-game mammals, bats, and small rodents. It is identified by the Utah Division of Wildlife Resources (UDWR) as critical year-long habitat for the Desert bighorn sheep.

This segment provides an exemplary illustration of the hydrologic transition from headwaters to a deeply incised canyon, all within the course of a few miles. The dramatic changes associated with the transition are visible from several vantage points along the canyon rim as well as while hiking through the canyon.

The drainage is intermittent.

Current status of land ownership and human use of the area

The river segment is 4 miles in length and is administered in its entirety by BLM. The lower end of the canyon could still be grazed. It has not been closed or relinquished for grazing. The primary activity occurring on public lands in the canyon is dispersed primitive recreation including hiking, hunting, and sightseeing. There are no private lands. This canyon is undeveloped and primitive and is within the Dirty Devil WSA.

Uses, including the reasonably foreseeable potential uses of land and water, that would be enhanced, foreclosed, or curtailed if the river were designated into the NWSRS by Congress, and the values that could be lost or diminished if the area is not protected as part of the national system

Designation as a WSR would be compatible with BLM proposals to maintain riparian values, protect the watershed and high quality of water, protect potential habitat for the MSO, protect Desert bighorn sheep habitat, and manage the lands for their primitive recreation opportunities.

There are no proposals or potential for dam-building on this segment. No other developments including roads, pipelines, or other structures are proposed or likely.

The entire canyon is within the Dirty Devil WSA. Designation of Larry Canyon into the NWSRS would be compatible with and enhance wilderness use and management of the area. Designation would also be compatible with management of the area as part of a Dirty Devil SRMA or ACEC, both contained in the Richfield PRMP/FEIS.

Failure to include Larry Canyon in the NWSRS would not necessarily diminish the values for which the river was determined eligible inasmuch as the area's WSA status would continue, and many of the other land use prescriptions contained within the Richfield PRMP/FEIS would, if implemented, also preserve and enhance such values.

Interest by local, state, or federal agencies; Native American tribes; and other public entities in congressional designation or non-designation of the river, and the extent to which river administration, including costs thereof, may be shared by state and local agencies or other potential partners

Some private citizens and regional and national conservation groups have promoted WSR designation. No state, tribal, or local governments have expressed support for inclusion of this river segment in the NWSRS.

None of the above entities would share costs or administration of the area should Congress designate it. There is also no contiguous federal agency to share the costs or administration. If the river was designated as a portion of the larger Dirty Devil watershed, then there would be opportunity for joint management with the adjacent NPS river segment.

The estimated cost to the government of acquiring lands and interests in lands and administering the area if the river is designated into the NWSRS by Congress

No funding for acquisition would be needed because there is no private land within the river corridor. Initial costs of administration would include preparing and implementing a corridor management plan and administering recreation permits. Yearly administration costs thereafter could involve additional studies, monitoring, and administering recreation permits.

The BLM's ability to manage and protect the values of the river segment as part of the NWSRS if designated by Congress, and other mechanisms to protect identified values or alternative ways to protect rivers other than through Congressional designation under the WSR Act

The BLM is capable of managing this segment as wild and scenic. Designation of this segment would not significantly elevate management costs above current levels nor require substantial increases in appropriations or diversion of resources from critical ongoing programs.

Larry Canyon is within the Dirty Devil WSA, which has been recommended for wilderness designation. Other alternatives to congressional WSR designation include land use prescriptions contained in the Richfield PRMP/FEIS to designate the river and surrounding lands as an SRMA and implement land use prescriptions to protect riparian systems, including limiting off-road motorized travel, mining and mineral leasing, and ROWs. New costs could be incurred to implement any of these management schemes.

Existing rights that may be adversely affected because of designation into the NWSRS or other issues or concerns

The lands within the river corridor are public lands administered by the BLM. There are no valid mining claims, mineral leases, private lands, or other existing rights within the eligible segment that would be affected by congressional designation.

Development within the river corridor is unlikely due to its WSA status. There are no issues regarding upstream or downstream effects.

The WSR Act infers a federal reserved water right upon designation. However, it does not quantify the right other than to place limitations on it. The Act states that it shall not be construed as a reservation for purposes other than those specified in the Act, or in quantities greater than necessary to accomplish these purposes. The amount of the federal right will therefore depend upon the river's flow, the values for which the river is being protected, and the unappropriated quantities in the river. It would be adjudicated through the state and would be junior to any rights existing prior to the date of designation.

No Mans Canyon

This section is recommended non-suitable because the values identified would be protected by alternative protection methods. The entire 7.1 miles of this segment are located within the Dirty Devil WSA. WSA management through the IMP would provide protection to the segment's outstandingly remarkable values. The segment would be located within the Dirty Devil SRMA. The proposed management prescriptions for this SRMA in relation to VRM, oil and gas leasing, and off-highway vehicle (OHV) use would provide additional protection to outstandingly remarkable values. The BLM believed that the quality of river characteristics in this segment would not significantly enhance nor contribute to the NWSRS.

Characteristics that do or do not make the area a worthy addition to the NWSRS

No Mans Canyon is a tributary to the Dirty Devil River. The river corridor and surrounding canyon system were inventoried as Class A scenery.

This canyon is one of the few that visitors can generally depend on for a reliable source of fresh water. Almost all visitors are from outside the general area. Almost all use occurs near the confluence with the Dirty Devil River and is associated with more extensive trips along the main drainage.

The river segment is free-flowing but intermittent. Water flows in No Mans Canyon can vary considerably from year to year based on upstream precipitation and water depletions. Large portions of the canyon in the upper reaches dry up during periods of the year.

Current status of land ownership and human use of the area

The eligible segment of No Mans Canyon is 7.1 miles in length. The entire river corridor is public land administered by BLM.

The area is remote and access is limited and difficult, recreational use is relatively light except during the canyoneering season. Mineral exploration has occurred in the past but no unpatented mining claims remain active in the area. The river corridor is within the Dirty Devil WSA. None of the Dirty Devil or its side canyons have been closed or relinquished to grazing.

Uses, including the reasonably foreseeable potential uses of land and water, that would be enhanced, foreclosed, or curtailed if the river were designated into the NWSRS by Congress, and the values that could be lost or diminished if the area is not protected as part of the national system

Designation would be compatible with BLM proposals to maintain riparian values, protect the watershed and high quality of water, protect potential habitat for the MSO, and manage the lands for their primitive recreation opportunities.

There are no proposals or potential for dam-building on this segment. No other development including roads, pipelines, or other structures are proposed or likely.

This entire canyon is within the Dirty Devil WSA. The BLM has recommended these lands to Congress for wilderness designation. Designation of No Mans Canyon into the NWSRS would be compatible with and enhance wilderness use and management of the area. Designation would also be compatible with management of the area as part of a Dirty Devil SRMA or ACEC, which are contained in the Richfield PRMP/FEIS.

Failure to include No Mans Canyon in the NWSRS would not necessarily diminish the values for which the river was determined eligible inasmuch as the area's WSA status would continue, and many of the

other land use prescriptions contained within the Richfield PRMP/FEIS would also preserve and enhance such values if implemented.

Interest by local, state, or federal agencies; Native American tribes; and other public entities in congressional designation or non-designation of the river, and the extent to which river administration, including costs thereof, may be shared by state and local agencies or other potential partners

Some private citizens and regional and national conservation groups have promoted designation. No state, tribal, or local government has expressed support for inclusion of this river segment in the NWSRS.

None of the above entities would share costs or administration of the area should Congress designate it. There is also no contiguous federal agency to share the costs or administration. However, if the river is designated as a portion of the larger Dirty Devil watershed, then there is opportunity for joint management with the adjacent NPS river segment.

The estimated cost to the government of acquiring lands and interests in lands and administering the area if the river is designated into the NWSRS by Congress

No funding for acquisition would be needed because there is no private land within the river corridor. The initial costs of administration for the first 3 years would involve management plan preparation and implementation and ongoing recreation permitting. Yearly administration costs thereafter may involve additional studies, monitoring, and ongoing recreation permitting.

The BLM's ability to manage and protect the values of the river segment as part of the NWSRS if designated by Congress, and other mechanisms to protect identified values or alternative ways to protect rivers other than through Congressional designation under the WSR Act

The BLM is capable of managing this segment as wild and scenic. Designation of this segment would not significantly elevate management costs above current levels nor require substantial increases in appropriations or diversion of resources from critical ongoing programs.

The entire 7.1 miles of this segment are located within the Dirty Devil WSA. WSA management through the IMP would provide protection to the segment's outstandingly remarkable values. The segment would be located within the Dirty Devil SRMA. The proposed management prescriptions for this SRMA in relation to VRM, oil and gas leasing, and OHV use would provide additional protection to the outstandingly remarkable values. New costs could be incurred to implement any of these management schemes.

Existing rights that may be adversely affected because of designation into the NWSRS or other issues or concerns

The lands within the river corridor are public lands administered by the BLM. There are no valid mining claims, mineral leases, private lands, or other existing rights within the eligible segment that would be affected by congressional designation.

Development within the river corridor is unlikely due to its WSA status. There are no issues regarding upstream or downstream effects.

The WSR Act infers a federal reserved water right upon designation. However, it does not quantify the right other than to place limitations on it. The Act states that it shall not be construed as a reservation for purposes other than those specified in the Act, or in quantities greater than necessary to accomplish these purposes. The amount of the federal right will therefore depend upon the river's flow, the values for which the river is being protected, and the unappropriated quantities in the river. It would be adjudicated through the state and would be junior to any rights existing prior to the date of designation.

Robbers Roost Canyon

This section is recommended non-suitable because the values identified would be protected by alternative protection methods. The BLM believed that the quality of river characteristics in this segment would not significantly enhance nor contribute to the NWSRS.

White Roost—4.6 miles of this fork are within the Dirty Devil WSA, and the additional 0.6 mile is proposed for management of wilderness characteristics. WSA management through the IMP and proposed management prescriptions for the wilderness characteristic lands would provide protection to this fork's outstandingly remarkable values.

Robbers Roost Middle Fork—This fork is located within the Dirty Devil WSA. WSA management through the IMP would provide protection to the segment's outstandingly remarkable values.

Robbers Roost North Fork—This fork is located within the Dirty Devil WSA. WSA management through the IMP would provide protection to the segment's outstandingly remarkable values.

Robbers Roost South Fork—This fork includes 10 miles within the Dirty Devil WSA. WSA management through the IMP would provide protection to the segment's outstandingly remarkable values. Management of the 1.6 miles outside the WSA would conflict with water rights and spring developments that occur within that area. This fork would be located within the Dirty Devil SRMA. The proposed management prescriptions for this SRMA in relation to VRM, oil and gas leasing, and OHV use would provide additional protection to the outstandingly remarkable values outside of the WSA.

Characteristics that do or do not make the area a worthy addition to the NWSRS

Robbers Roost Canyon is a side canyon and tributary to the Dirty Devil River. The river corridor and the entire canyon are rated as Class A, with superlative examples of red rock scenery. The name, outlaw lore, and scenery draw recreationists from outside the region. Robbers Roost is the most accessible of all the Dirty Devil side canyons, and is publicized as a destination hike in a number of guidebooks. Canyoneers have come to recognize that the upper ends of each of the Robbers Roost tributaries contain superb opportunities for technical slot canyoneering. The canyon contains prehistoric values associated with Fremont Native American and archaic inhabitants. The river segment is free-flowing in character and free of impoundments and other intrusions. Water flows vary considerably from year to year based on precipitation, and the upper reaches of the canyons dry seasonally.

Current status of land ownership and human use of the area

The river segment is 33 miles in length—31 miles cross public lands administered by BLM and 2 miles cross lands owned by the State of Utah. Although there is livestock grazing on the benchlands above the canyons, most use in the canyons is recreational including hiking, canyoneering, hunting, sightseeing, photography, and primitive recreation. The entire river corridor is within the Dirty Devil WSA.

Uses, including the reasonably foreseeable potential uses of land and water, that would be enhanced, foreclosed, or curtailed if the river was designated into the NWSRS by Congress, and the values that could be lost or diminished if the area is not protected as part of the national system

Designation would be compatible with BLM proposals to maintain riparian values, protect the watershed and high quality of water, protect potential habitat for the MSO, and manage the lands for their primitive recreation opportunities.

There is no proposal or potential for dam-building on this segment. No other development including roads, pipelines, or other structures could be developed within this stretch of river if classified as "wild," but no such development is proposed or likely considering the area's WSA status.

This entire canyon is within the Dirty Devil WSA. The BLM has recommended these lands to Congress for wilderness designation. Designation of Robbers Roost Canyon into the NWSRS would be compatible with and enhance wilderness use and management of the area. Designation would also be compatible with management of the area as part of a Dirty Devil SRMA or ACEC, which are contained in the Richfield PRMP/FEIS.

Failure to include Robbers Roost Canyon in the NWSRS would not necessarily diminish the values for which the river was determined eligible inasmuch as the area's WSA status would continue, and many of the other land use prescriptions contained within the Richfield PRMP/FEIS would also preserve and enhance such values if implemented.

Interest by local, state, or federal agencies; Native American tribes; and other public entities in congressional designation or non-designation of the river, and the extent to which river administration, including costs thereof, may be shared by state and local agencies or other potential partners

Some private citizens and regional and national conservation groups have promoted designation. No state, tribal, or local governments have expressed support for inclusion of this river segment in the NWSRS.

None of the above entities would share costs or administration of the area should Congress designate it. There is also no contiguous federal agency to share the costs or administration. However, if the river was designated as a portion of the larger Dirty Devil Watershed, there would be opportunity for joint management with the adjacent NPS river segment of the Dirty Devil River.

The estimated cost to the government of acquiring lands and interests in lands and administering the area if the river is designated into the NWSRS by Congress

No funding for acquisition would be needed because there is no private land within the river corridor. The lands owned by the State of Utah could be acquired by exchange with public lands elsewhere The initial costs of administration for the first 3 years would involve management plan preparation and implementation and ongoing recreation permitting. Yearly administration costs thereafter may involve additional studies, monitoring, and ongoing recreation permitting.

The BLM's ability to manage and protect the values of the river segment as part of the NWSRS if designated by Congress, and other mechanisms to protect identified values or alternative ways to protect rivers other than through Congressional designation under the WSR Act

BLM is capable of managing this segment as wild and scenic. Designation of this segment would not significantly elevate management costs above current levels nor require substantial increases in appropriations or diversion of resources from critical ongoing programs.

White Roost—4.6 miles of this fork are within the Dirty Devil WSA, and the additional 0.6 mile is proposed for management of wilderness characteristics. WSA management through the IMP and proposed management prescriptions for the wilderness characteristic lands would provide protection to this fork's outstandingly remarkable values.

Robbers Roost Middle Fork—This fork is located within the Dirty Devil WSA. WSA management through the IMP would provide protection to the segment's outstandingly remarkable values.

Robbers Roost North Fork—This fork is located within the Dirty Devil WSA. WSA management through the IMP would provide protection to the segment's outstandingly remarkable values.

Robbers Roost South Fork—This fork includes 10 miles within the Dirty Devil WSA. WSA management through the IMP would provide protection to the segment's outstandingly remarkable values. Management of the 1.6 miles outside the WSA would conflict with water rights and spring developments that occur within that area. This fork would be located within the Dirty Devil SRMA. The proposed management prescriptions for this SRMA in relation to VRM, oil and gas leasing, and OHV use would provide additional protection to the outstandingly remarkable values outside of the WSA.

Existing rights that may be adversely affected because of designation into the NWSRS, or other issues or concerns

The lands within the river corridor are public lands administered by BLM. There are no valid mining claims, mineral leases, private lands, or other existing rights within the eligible segment that would be affected by congressional designation.

Development within the river corridor is unlikely due to its WSA status. There are no issues regarding upstream or downstream effects.

The WSR Act infers a federal reserved water right upon designation. However, it does not quantify the right other than to place limitations on it. The Act states that it shall not be construed as a reservation for purposes other than those specified in the Act, or in quantities greater than necessary to accomplish these purposes. The amount of the federal right will therefore depend upon the river's flow, the values for which the river is being protected, and the unappropriated quantities in the river. It would be adjudicated through the state and would be junior to any rights existing prior to the date of designation.

Sams Mesa Box Canyon

This section is recommended non-suitable because the values identified would be protected by alternative protection methods. The entire 9.5 miles of this segment are located within the Dirty Devil WSA. WSA management through the IMP would provide protection to the segment's outstandingly remarkable values. The segment would be located within the Dirty Devil SRMA. The proposed management prescriptions for this SRMA in relation to VRM, oil and gas leasing, and OHV use would provide additional protection to the outstandingly remarkable values. BLM believed that the quality of river characteristics in this segment would not significantly enhance nor contribute to the NWSRS.

Characteristics that do or do not make the area a worthy addition to the NWSRS

Sams Mesa Box Canyon was inventoried as Class A scenery. It is a very deep, rugged canyon that descends through a series of steep falls that are visually attractive. At 400 to 600 feet deep, it is the deepest of all the Dirty Devil River tributary canyons.

There is no dependable hiking route into this canyon. Most visitors into the canyon use a semi-technical trail that starts on the west side of the Dirty Devil on Burr Point and drops in near Twin Corral Box Canyon. Access to the upper end of Sams Mesa Box Canyon is limited to technical canyoneering. People are willing to travel long distances to use the recreational opportunities along this river segment as indicated by visitation levels despite lengthy and difficult access.

This canyon provides habitat for the MSO and includes two known owl protected activity centers (PACs). The canyon has been designated by the UDWR as year-long critical habitat for Desert bighorn sheep.

The river segment is free of impoundments and other intrusions.

Current status of land ownership and human use of the area

The river segment is 9.5 miles in length, entirely within public lands administered by BLM. Human use includes dispersed recreational activity including hiking, canyoneering, sightseeing, photography, and primitive recreation. The river corridor is almost completely within the Dirty Devil WSA, with the exception of a small portion of the south bank near its junction with the Dirty Devil River.

Although not used in recent years, this area is part of the Robbers Roost grazing allotment.

Uses, including the reasonably foreseeable potential uses of land and water, that would be enhanced, foreclosed, or curtailed if the river was designated into the NWSRS by Congress, and the values that could be lost or diminished if the area is not protected as part of the national system

Designation would be compatible with BLM proposals to maintain riparian values, protect the watershed and high quality of water, protect potential habitat for the MSO and Desert bighorn sheep, and manage the lands for their primitive recreation opportunities

There are no proposals or potential for dam-building on this segment. No other development including roads, pipelines, or other structures are proposed or likely.

Most of this canyon is within the Dirty Devil WSA. The BLM has recommended these lands to Congress for wilderness designation. Designation of Sams Mesa Box Canyon into the NWSRS would be compatible with and enhance wilderness use and management of the area. Designation would also be compatible with management of the area as part of a Dirty Devil SRMA or ACEC, which are contained in the Richfield PRMP/FEIS.

Failure to include Sams Mesa Box Canyon in the NWSRS would not necessarily diminish the values for which the river was determined eligible inasmuch as the area's WSA status would continue, and many of the other land use prescriptions contained within the Richfield PRMP/FEIS would also preserve and enhance such values if implemented.

Interest by local, state, or federal agencies; Native American tribes; and other public entities in congressional designation or non-designation of the river, and the extent to which river administration, including costs thereof, may be shared by state and local agencies or other potential partners

Some private citizens and regional and national conservation groups have promoted designation. No state, tribal, or local government has expressed support for inclusion of this river segment in the NWSRS.

None of the above entities would share costs or administration of the area should Congress designate it. There is also no contiguous federal agency to share the costs or administration. However, if the river was designated as a portion of the larger Dirty Devil watershed there would be opportunity for joint management with the adjacent NPS river segment for the Dirty Devil River.

The estimated cost to the government of acquiring lands and interests in lands and administering the area if the river is designated into the NWSRS by Congress

No funding for acquisition would be needed because there is no private land within the river corridor. The initial costs of administration for the first 3 years would involve management plan preparation and implementation and ongoing recreation permitting. Yearly administration costs thereafter may involve additional studies, monitoring, and ongoing recreation permitting.

The BLM's ability to manage and protect the values of the river segment as part of the NWSRS if designated by Congress, and other mechanisms to protect identified values or alternative ways to protect rivers other than through Congressional designation under the WSR Act

The BLM is capable of managing this segment as wild and scenic. Designation of this segment would not significantly elevate management costs above current levels nor require substantial increases in appropriations or diversion of resources from critical ongoing programs.

The entire 9.5 miles of this segment are located within the Dirty Devil WSA. WSA management through the IMP would provide protection to the segment's outstandingly remarkable values. The segment would be located within the Dirty Devil SRMA. The proposed management prescriptions for this SRMA in relation to VRM, oil and gas leasing, and OHV use would provide additional protection to the outstandingly remarkable values. New costs could be incurred to implement any of these management schemes.

Existing rights that may be adversely affected because of designation into the NWSRS, or other issues or concerns

The lands within the river corridor are public lands administered by the BLM. There are no valid mining claims, mineral leases, private lands, or other existing rights within the eligible segment that would be affected by congressional designation.

Development within the river corridor is unlikely due to its WSA status. There are no issues regarding upstream or downstream effects.

The WSR Act infers a federal reserved water right upon designation. However, it does not quantify the right other than to place limitations on it. The Act states that it shall not be construed as a reservation for purposes other than those specified in the Act, or in quantities greater than necessary to accomplish these purposes. The amount of the federal right will therefore depend upon the river's flow, the values for which the river is being protected, and the unappropriated quantities in the river. It would be adjudicated through the state and would be junior to any rights existing prior to the date of designation.

Twin Corral Box Canyon

This section is recommended non-suitable because the values identified would be protected by alternative protection methods. Of the 9 miles of this segment 8 miles are located within the Dirty Devil WSA. WSA management through the IMP would provide protection to the segment's outstandingly remarkable values located within the WSA. The remainder of the segment is isolated by two state sections, which would result in management conflicts. The segment would be located within the Dirty Devil SRMA. The proposed management prescriptions for this SRMA in relation to VRM, oil and gas leasing, and OHV use would provide additional protection to the outstandingly remarkable value outside of the WSA. BLM believed that the quality of river characteristics in this segment would not significantly enhance nor contribute to the NWSRS.

Characteristics that do or do not make the area a worthy addition to the NWSRS

Twin Corral Box Canyon possesses Class A scenery, enhanced by the transition from the Wingate to the Chinle formation. The canyon provides designated MSO habitat. In addition, the canyon has been designated by the UDWR as year-long critical habitat for Desert bighorn sheep.

The river segment is free-flowing and free of impoundments and other intrusions. Water flows in Twin Corral Box Canyon can vary considerably year to year, and the upper reaches of the canyon dry up seasonally.

Current status of land ownership and human use of the area

The river segment is 10.1 miles in length. Of that, 9 miles cross public lands administered by BLM, with 1.1 river miles crossing lands owned by the State of Utah. There are no private lands. Public lands support dispersed activity including hiking, canyoneering, sightseeing, photography, and primitive recreation.

All but the upper 2 miles of the canyon are within the Dirty Devil WSA. Twin Corral Box Canyon is within the Robbers Roost grazing allotment. Although no grazing has occurred in recent years, it is not closed or relinquished.

Uses, including the reasonably foreseeable potential uses of land and water, that would be enhanced, foreclosed, or curtailed if the river was designated into the NWSRS by Congress, and the values that could be lost or diminished if the area is not protected as part of the national system

Designation as a WSR would be compatible with BLM proposals to maintain riparian values, protect the watershed and water quality, protect designated critical habitat for the MSO, and manage the lands for primitive recreation opportunities.

There are no proposals or potential for dam-building on this segment. No other development including roads, pipelines, or other structures are proposed or likely.

Most of the canyon is within the Dirty Devil WSA. The BLM has recommended these lands to Congress for wilderness designation. Designation of Twin Corral Box Canyon into the NWSRS would be compatible with and enhance wilderness use and management of the area. Designation would also be compatible with management of the area as part of a Dirty Devil SRMA or ACEC, which are contained in the Richfield PRMP/FEIS.

Failure to include Twin Corral Box Canyon in the NWSRS would not necessarily diminish the values for which the river was determined eligible inasmuch as the area's WSA status would continue, and many of the other land use prescriptions contained within the Richfield PRMP/FEIS would also preserve and enhance such values if implemented.

Interest by local, state, or federal agencies; Native American tribes; and other public entities in congressional designation or non-designation of the river, and the extent to which river administration, including costs thereof, may be shared by state and local agencies or other potential partners

Some private citizens and regional and national conservation groups have promoted designation. No state, tribal, or local government has expressed support for inclusion of this river segment in the NWSRS.

None of the above entities would share costs or administration of the area should Congress designate it. There is also no contiguous federal agency to share the costs or administration. However, if the river is designated as a portion of the larger Dirty Devil watershed, then there could be opportunities for joint management with the NPS river segment for the Dirty Devil River.

The estimated cost to the government of acquiring lands and interests in lands and administering the area if the river is designated into the NWSRS by Congress

No funding for acquisition would be needed because there is no private land within the river corridor. The initial costs of administration for the first 3 years would involve management plan preparation and implementation and ongoing recreation permitting. Yearly administration costs thereafter could involve additional studies, monitoring, and ongoing recreation permitting. State lands could be acquired through exchange.

The BLM's ability to manage and protect the values of the river segment as part of the NWSRS if designated by Congress, and other mechanisms to protect identified values or alternative ways to protect rivers other than through Congressional designation under the WSR Act

The BLM is capable of managing this segment as wild and scenic. Designation of this segment would not significantly elevate management costs above current levels nor require substantial increases in appropriations or diversion of resources from critical ongoing programs.

Of the 9 miles of this segment 8 miles are located within the Dirty Devil WSA. WSA management through the IMP would provide protection to the segment's outstandingly remarkable values located within the WSA. The remainder of the segment is isolated by two state sections, which would result in management conflicts. The segment would be located within the Dirty Devil SRMA. The proposed management prescriptions for this SRMA in relation to VRM, oil and gas leasing, and OHV use would provide additional protection to the outstandingly remarkable values outside of the WSA. New costs could be incurred to implement any of these management schemes.

Existing rights that may be adversely affected because of designation into the NWSRS, or other issues or concerns

There are no valid mining claims, mineral leases, or private lands within the public land portion of the eligible segment. The State of Utah manages 1 mile of the eligible segment. Development within the river corridor is unlikely due to its WSA status. There are no issues regarding upstream or downstream effects.

The WSR Act infers a federal reserved water right upon designation. However, it does not quantify the right other than to place limitations on it. The Act states that it shall not be construed as a reservation for purposes other than those specified in the Act, or in quantities greater than necessary to accomplish these purposes. The amount of the federal right will therefore depend upon the river's flow, the values for which the river is being protected, and the unappropriated quantities in the river. It would be adjudicated through the state and would be junior to any rights existing prior to the date of designation.

Other Rivers

Fish Creek

This section is recommended non-suitable because the cultural values identified would be protected by laws and regulations related to cultural resources and lack of management feasibility due to its small size. This segment consists of 0.25 miles of Fish Creek between U.S. Forest Service (USFS) and private lands. Further, USFS has not found its portion of this creek to be neither eligible nor suitable as a WSR. On the national forest sections a potential outstandingly remarkable value of Recreational Fishing was identified. However, the segment was found to be not eligible because the values were rated as only moderately responsive to the definition and attributes. The scale of importance for recreation was less than regional. The BLM believed that the quality of river characteristics in this segment would not significantly enhance nor contribute to the NWSRS.

Characteristics that do or do not make the area a worthy addition to the NWSRS

This stream segment includes a significant Fremont Native American site containing rock art (Fish Creek Cove pictographs) and other evidence of habitation. The rock art is nationally significant and has been nominated to the National Register of Historic Places (NRHP). It is an important site to several Native American tribes.

The river segment is free-flowing in character and free of impoundments and other intrusions. Water flows in Fish Creek can vary considerably from year to year. The segment involving public lands is very short, totaling just 0.25 miles in length.

Current status of land ownership and human use of the area

The river segment is approximately 0.25 miles in length, entirely on public lands administered by the BLM. Public lands within the river corridor support livestock grazing and dispersed activity including sightseeing and photography. Recreation use levels are very low.

Uses, including the reasonably foreseeable potential uses of land and water, that would be enhanced, foreclosed, or curtailed if the river was designated into the NWSRS by Congress, and the values that could be lost or diminished if the area is not protected as part of the national system

Designation would be compatible with BLM proposals to maintain riparian values, protect the watershed and high quality of water, and protect cultural features.

Non-designation would leave open the possibility of future water developments that could alter the free-flowing nature of the stream. No such developments or uses are currently proposed, however.

Interest by local, state, or federal agencies; Native American tribes; and other public entities in congressional designation or non-designation of the river, and the extent to which river administration, including costs thereof, may be shared by state and local agencies or other potential partners

USFS found its upstream section to be neither eligible nor suitable for inclusion into the NWSRS. On the national forest sections a potential outstandingly remarkable value of Recreational Fishing was identified. However, the segment was found not eligible because the values were rated as only moderately responsive to the definition and attributes. The scale of importance for recreation was less than regional.

Some private citizens and regional and national conservation groups have promoted designation as a means of preserving the free-flowing character of the segment. No state, tribal, or local government has expressed support for inclusion of this river segment in the NWSRS. There is no opportunity to share costs with the above entities.

The estimated cost to the government of acquiring lands and interests in lands and administering the area if the river is designated into the NWSRS by Congress

No private lands are proposed for acquisition. The initial costs of administration for the first 3 years would involve management plan preparation and implementation. Yearly administration costs thereafter would involve monitoring.

The BLM's ability to manage and protect the values of the river segment as part of the NWSRS if designated by Congress, and other mechanisms to protect identified values or alternative ways to protect rivers other than through Congressional designation under the WSR Act

The public lands portion of Fish Creek is relatively short and would be difficult to manage separately from adjoining state, private, and national forest lands. USFS did not find its segment of Fish Creek as an eligible WSR. The outstandingly remarkable cultural value within this segment is protected by laws and regulations related to cultural resources.

Existing rights that may be adversely affected because of designation into the NWSRS, or other issues or concerns

No valid existing rights were identified in the eligible segment. The WSR Act infers a federal reserved water right upon designation. However, it does not quantify the right other than to place limitations on it. The Act states that it shall not be construed as a reservation for purposes other than those specified in the

Act, or in quantities greater than necessary to accomplish these purposes. The amount of the federal right will therefore depend upon the river's flow, the values for which the river is being protected, and the unappropriated quantities in the river. It would be adjudicated through the state and would be junior to any rights existing prior to the date of designation.

This segment consists of 0.25 miles of Fish Creek between USFS and private lands. USFS has not found its portion of this creek to be eligible as a WSR. This segment would not be feasible for management as a WSR due to its size. The cultural outstandingly remarkable value of this segment would be protected through laws and regulations related to Cultural Resources.

Fremont River (Below Capitol Reef NP to Caineville Ditch Diversion)

This section was found non-suitable due to ROWs and ownership conflicts. This segment is adjacent to Utah State Highway 24 (south side of the river), and the ROW for this highway is within the 0.25-mile corridor of the segment. The powerline ROW for the communities of Caineville and Hanksville is located on the north side of the river and is within the 0.25-mile corridor of the segment. There are also state and private lands within the segment. This segment of the Fremont River is not recommended for suitability as a WSR due to conflicts with the ROWs and ownership. The BLM believed that the quality of river characteristics in this segment would not significantly enhance nor contribute to the NWSRS.

Characteristics that do or do not make the area a worthy addition to the NWSRS

The canyon of the Fremont River between Capitol Reef National Park and Caineville is geologically interesting in that it illustrates the relatively recent age of the local landscape and the huge volumes of material that were removed in a very short time.

A significant length of this river segment parallels Utah State Highway 24, the main east-west route through the county and the access route to Capitol Reef National Park. Much of the canyon is cut into the highly photogenic Brushy Basin member of the Morrison formation, and examples of large balanced rocks are perched along the canyon walls. That the river cuts through the geological formations and is free-flowing and perennial in character makes it rare in the high desert of Southern Utah. Approximately 700,000 visitors travel to Capitol Reef National Park each year, many of whom enter or leave the park along this stretch of the river.

Current status of land ownership and human use of the area

There are 6 river miles between the Capitol Reef National Park boundary and the Caineville ditch diversion. Of this, 4 miles are public lands administered by the BLM and 2 miles are owned by the State of Utah or privately owned. Other than Utah State Highway 24 that parallels the river, there is no development. Lands within the river corridor are open for grazing, although topography restricts actual use. Several small vehicle pull-offs also exist for day use and overnight camping. Highway 24 is a state-designated scenic highway. The ROW for this highway is within the 0.25-mile corridor of the segment. The powerline ROW for the communities of Caineville and Hanksville is located on the north side of the river and is within the 0.25-mile corridor of the segment. This segment of the Fremont River is not recommended for suitability as a WSR due to conflicts with the ROWs and ownership.

Uses, including the reasonably foreseeable potential uses of land and water, that would be enhanced, foreclosed, or curtailed if the river was designated into the NWSRS by Congress, and the values that could be lost or diminished if the area is not protected as part of the national system

WSR designation would be compatible with BLM proposals to maintain riparian values and protect the watershed and high quality of water. It would help to maintain the important scenic values of the area.

Inclusion into the NWSRS would preclude dams or other water developments within the designated stretch, but no such developments are currently planned. Wayne County interests have proposed water diversion and storage projects for the Fremont River in a variety of locations, including sites upstream and downstream from this location. To date, none of the proposals have moved beyond the idea stage.

Designation would complement management of the eligible river segment within Capitol Reef National Park.

Failure to include this segment of the Fremont River in the NWSRS would not necessarily diminish the values for which the river was determined eligible inasmuch as other land use prescriptions contained within the Richfield PRMP/FEIS could also preserve and enhance such values.

Interest by local, state, or federal agencies; Native American tribes; and other public entities in congressional designation or non-designation of the river, and the extent to which river administration, including costs thereof, may be shared by state and local agencies or other potential partners

Some private citizens and regional and national conservation groups have promoted designation as a means of preserving the free-flowing character and other values of this nationally significant river. No state, tribal, or local government has expressed support for inclusion of the river in the NWSRS. Local and state agencies, water users, and municipalities oppose designation due to perceptions that existing water rights could be affected and opportunities for water development could be foreclosed, not only within the eligible river segment, but also upstream and downstream. In actuality, there is no likely development identified within the eligible segment, and any upstream or downstream development would only be affected if federal money was involved, and even then only if the development would invade or unreasonably diminish fish, wildlife, recreation, or scenic values identified within the designated segment at the time of designation. Wayne County has proposed a water diversion and storage project for the Fremont River in a variety of locations far upstream of the eligible segment in the past and for a number of different purposes, but has no actual proposal under consideration.

Congressional designation of this eligible segment would not preclude consideration of this water diversion and storage project in the future, as long as it would not exceed the "invade or unreasonably diminish" standard discussed above. Although the WSR Act infers a federal reserved water right upon designation, rather than establishing an amount it actually imposes a limit, expressing that any such right is to be the minimum necessary for the purposes of the Act. Such right would have to be adjudicated through the state and would be junior to any existing rights.

Although none of the above entities would share costs, because NPS has determined the contiguous portion of the river that it manages to be eligible, costs and administration of the river area could be shared with it if Congress were to also designate the portion of the river within its boundaries.

The estimated cost to the government of acquiring lands and interests in lands and administering the area if the river is designated into the NWSRS by Congress

Funding for acquisition would be needed if it was determined that the private land within the river corridor were desirable for acquisition. The cost of acquiring the lands is not known at this time. State lands could be acquired through exchange. The initial costs of administration for the first 3 years would involve management plan preparation and implementation. Yearly administration costs thereafter could involve additional studies and monitoring.

The BLM's ability to manage and protect the values of the river segment as part of the NWSRS if designated by Congress, and other mechanisms to protect identified values or alternative ways to protect rivers other than through Congressional designation under the WSR Act

The BLM is capable of managing this segment as wild and scenic. Designation of this segment would not significantly elevate management costs above current levels nor require substantial increases in appropriations or diversion of resources from critical ongoing programs. Also, BLM could partner with NPS in administering the river.

Alternatives to congressional WSR designation are proposed in the Richfield PRMP/FEIS and include prescriptions to manage riparian systems, watershed, water quality, and habitats for sensitive and listed fish and wildlife species, including placing limits on off-road motorized travel, mining and mineral leasing, and ROWs. New costs could be incurred to implement any of these management schemes.

Existing rights that may be adversely affected because of designation into the NWSRS, or other issues or concerns

The lands within the river corridor are public lands administered by the BLM. There are no valid mining claims, mineral leases, private lands, or other existing rights within the eligible segment that would be affected by congressional designation.

Local and state agencies, water users, and municipalities have expressed concern that opportunities for water development could be foreclosed, not only within the eligible river segment, but also upstream and downstream.

The WSR Act infers a federal reserved water right upon designation. However, it does not quantify the right other than to place limitations on it. The Act states that it shall not be construed as a reservation for purposes other than those specified in the Act, or in quantities greater than necessary to accomplish these purposes. The amount of the federal right will therefore depend upon the river's flow, the values for which the river is being protected, and the unappropriated quantities in the river. It would be adjudicated through the state and would be junior to any rights existing prior to the date of designation.

Maidenwater Creek

Maidenwater Creek was not found to be suitable due to the highway corridor ROW and conflicts with ownership. Utah Highway 276 bisects this 4.3-mile segment. The highway ROW consists of 100 feet on each side of centerline, and a box culvert has been constructed in the creek at this location. There are also state lands located within the segment. Further, other management prescriptions would provide protection to the outstandingly remarkable values. The portion of the segment below Highway 276 has been identified for management of the wilderness characteristics of that area. The portion of the segment above Highway 276 is proposed as VRM Class II, which would provide protection for the scenic values. Proposed decisions pertaining to riparian protection zones and fish and wildlife would provide protection for those values. The BLM determined that the quality of river characteristics in this segment would not significantly enhance nor contribute to the NWSRS.

Characteristics that do or do not make the area a worthy addition to the NWSRS

The entire canyon is rated Class A scenery due to the closeness of canyon walls, topographical screening, and the diversity of vegetation, including on the canyon walls. Visitors to the canyon are attracted by the scenic contrast displayed in the formations. This area is unique in that hanging gardens are prevalent and have not been heavily impacted by domestic ungulates.

This narrow slot canyon provides canyoneering opportunities with a variety of visual and other natural attractions. Guidebooks and websites publicize this area and attract visitors from outside the region. Almost all users to the area come from outside the region.

There is a diversity of animal life. Speckled dace, several species of aquatic invertebrates, observed ring-tail cat, deer and bighorn sheep tracks, and scat and old beaver cuttings and blown-out dams were noted in a field visit.

This is an intermittent, free-flowing segment. The amount of water present can vary considerably seasonably and from year to year.

Current status of land ownership and human use of the area

The river segment is 4 miles in length, including 3 miles of public lands administered by BLM and 1 mile of state land. Public lands within the river corridor support livestock grazing and dispersed recreational activity including sightseeing, canyoneering, hiking, and photography. Actual cattle use in the river corridor is restricted by topography to the benchlands above the canyon, because there are limited access points. Utah Highway 276 bisects this 4-mile segment. The highway ROW consists of 100 feet on each side of centerline, and a box culvert has been constructed in the creek at this location. Due to the highway corridor ROW and conflicts with ownership, Maidenwater Creek is not recommended for suitability as a WSR.

Uses, including the reasonably foreseeable potential uses of land and water, that would be enhanced, foreclosed, or curtailed if the river were designated into the NWSRS by Congress, and the values that could be lost or diminished if the area is not protected as part of the national system

Designation would be compatible with BLM proposals to maintain riparian values and protect the watershed and high quality of water.

Non-designation would leave open the possibility of future water developments that could alter the free-flowing nature of the stream, thus diminishing natural values within public lands and limiting options for habitat enhancements. No such developments or uses are currently proposed, however.

Interest by local, state, or federal agencies; Native American tribes; and other public entities in congressional designation or non-designation of the river, and the extent to which river administration, including costs thereof, may be shared by state and local agencies or other potential partners

Some private citizens and regional and national conservation groups have promoted designation. No state, tribal, or local government has expressed support for inclusion of this river segment in the NWSRS. Local and state agencies, water users, and municipalities oppose designation due to perceptions that existing water rights could be affected and opportunities for water development could be foreclosed, not only within the eligible river segment, but also upstream and downstream. In actuality, there is no likely development identified within the eligible segment, and any upstream or downstream development would only be affected if federal money was involved and if the development would invade or unreasonably diminish fish, wildlife, recreation, or scenic values identified within the designated segment at the time of designation. Although the WSR Act infers a federal reserved water right upon designation, rather than establishing an amount it actually imposes a limit, expressing that any such right is to be the minimum necessary for the purposes of the Act. Such right would have to be adjudicated through the state and would be junior to any existing rights.

There is no opportunity to share costs of administration with the above entities. Also, there is no contiguous federal agency with which to share cost of administration.

The estimated cost to the government of acquiring lands and interests in lands and administering the area if the river is designated into the NWSRS by Congress

No funding for acquisition would be needed because there is no private land within the river corridor. Utah state lands could be acquired through exchange with other public lands elsewhere. The initial costs of administration for the first 3 years would involve management plan preparation and implementation. Yearly administration costs thereafter would involve monitoring.

The BLM's ability to manage and protect the values of the river segment as part of the NWSRS if designated by Congress, and other mechanisms to protect identified values or alternative ways to protect rivers other than through Congressional designation under the WSR Act

The BLM is capable of managing this segment as wild and scenic. Designation of this segment would not significantly elevate management costs above current levels nor require substantial increases in appropriations or diversion of resources from critical ongoing programs.

Other management prescriptions would provide protection to the outstandingly remarkable values. The portion of the segment below Highway 276 has been identified for management of the wilderness characteristics of that area. The portion of the segment above Highway 276 is proposed as VRM Class II, which would provide protection for the scenic values. Proposed decisions pertaining to riparian protection zones and fish and wildlife would provide protection for those values.

Existing rights that may be adversely affected because of designation into the NWSRS, or other issues or concerns

The lands within the river corridor are public lands administered by the BLM. There are no valid mining claims, mineral leases, private lands, or other existing rights within the eligible segment that would be affected by congressional designation.

The WSR Act infers a federal reserved water right upon designation. However, it does not quantify the right other than to place limitations on it. The Act states that it shall not be construed as a reservation for purposes other than those specified in the Act, or in quantities greater than necessary to accomplish these purposes. The amount of the federal right will therefore depend upon the river's flow, the values for which the river is being protected, and the unappropriated quantities in the river. It would be adjudicated through the state and would be junior to any rights existing prior to the date of designation.

Quitchupah Creek

Quitchupah Creek was not found to be suitable. The small portion of public land along the river would make management difficult. River corridor uses include livestock grazing and dispersed recreational activities such as hunting. Recreation use levels are very low. The canyon has been proposed and is currently under review for possible development of a coal haul road. The BLM believed that the quality of river characteristics in this segment would not significantly enhance nor contribute to the NWSRS.

Characteristics that do or do not make the area a worthy addition to the NWSRS

There are many documented Fremont and archaic habitation sites and use areas as well as the remnants of more recent historic activity within the river corridor and canyon. Many of these sites have been determined by the Utah State Historic Preservation Officer to be eligible for listing in the NRHP. Also, the Paiute Tribe of Utah and the Hopi Tribe have both stated that the canyon is sacred to them. Tribes contend that the traditional use of the canyon plays an important role in the spiritual welfare and existence of both tribes. An ethnographic study conducted to document the importance and use of the canyon to and by the interested tribes supports this view.

Current status of land ownership and human use of the area

The river segment is 1.4 miles in length, entirely public lands administered by BLM. River corridor uses include livestock grazing and dispersed recreational activities such as hunting. Recreation use levels are very low. The canyon has been proposed and is currently under review for possible development of a coal haul road.

Uses, including the reasonably foreseeable potential uses of land and water, that would be enhanced, foreclosed, or curtailed if the river were designated into the NWSRS by Congress, and the values that could be lost or diminished if the area is not protected as part of the national system

There are no proposals or potential for dam-building on this segment. However, the canyon has been proposed and is currently under review for possible development of a coal haul road. Failure to include Quitchupah Creek in the NWSRS would not necessarily diminish the values for which the river was determined.

Interest by local, state, or federal agencies; Native American tribes; and other public entities in congressional designation or non-designation of the river, and the extent to which river administration, including costs thereof, may be shared by state and local agencies or other potential partners

Tribal governments support WSR designation to protect cultural resource values found along the river corridor. Local and state agencies have expressed opposition due to the effect such designation could have on the proposed coal haul road.

None of the above entities would share costs or administration of the area should Congress designate it. USFS did not find its portion of Quitchupah Creek eligible for inclusion in the NWSRS.

The estimated cost to the government of acquiring lands and interests in lands and administering the area if the river is designated into the NWSRS by Congress

No acquisition of private or state land is proposed. The initial costs of administration for the first 3 years would involve management plan preparation and implementation. Yearly administration costs thereafter could involve additional studies and monitoring.

The BLM's ability to manage and protect the values of the river segment as part of the NWSRS if designated by Congress, and other mechanisms to protect identified values or alternative ways to protect rivers other than through Congressional designation under the WSR Act

The small portion of public land along the river would make management difficult.

Existing rights that may be adversely affected because of designation into the NWSRS, or other issues or concerns

No existing rights were identified that would be affected by adding the river segment to the NWSRS.

The WSR Act infers a federal reserved water right upon designation. However, it does not quantify the right other than to place limitations on it. The Act states that it shall not be construed as a reservation for purposes other than those specified in the Act, or in quantities greater than necessary to accomplish these purposes. The amount of the federal right will therefore depend upon the river's flow, the values for which the river is being protected, and the unappropriated quantities in the river. It would be adjudicated through the state and would be junior to any rights existing prior to the date of designation.

APPENDIX 4—303(D) LIST OF IMPAIRED WATERS

Pursuant to Section 303(d) of the Clean Water Act (as amended), each state is required to identify those water bodies for which existing pollution controls are not stringent enough to maintain state water quality standards. Water or water bodies (e.g., lakes, reservoirs, rivers, and streams) that are not currently achieving or are not expected to achieve those standards are identified as water quality limited. The quality of a water body can be limited because of point sources of pollution, non-point sources of pollution, or both. In addition, pollutants can result from habitat alterations (e.g., riparian habitat loss) or hydrological modifications. Surface water quality problems are detailed in Utah's 303(d) list of impaired waters, as required by the Clean Water Act.

A full list of the streams and water bodies located within the Richfield Field Office (RFO) and listed on Utah's 2006 303(d) list of impaired waters is included in Table A4-1 and Table A4-2. Water bodies that received permit renewals between April 1, 2004, and March 31, 2006, are listed for pollutants that are not controlled through technology-based requirements or end-of-pipe requirements. With few exceptions, stream water bodies assessed as "partially supporting" or "not supporting" their beneficial uses are listed.

Total Maximum Daily Load (TMDL) reports and Water Quality Management Plans are discussed in the table footnotes. Of the six stream assessment units in Category 5A on the 2006 Utah 303(d) List of Impaired Waters, only Sevier River-6 is not included in a current TMDL plan. Lower Ivie, Peterson, and Lost Creeks were assessed for total dissolved solids (TDS) in TMDL plans that the Environmental Protection Agency (EPA) approved 1 to 2 years ago. TDS standards have been determined stream by stream for each of the three streams. They remain in Category 5A while water quality monitoring recalibrated in August 2004 is continued and analyzed to determine whether the new TDS standards are being met for each stream. East Fork Sevier-4 continues to be listed in Category 5A for total phosphorus, even though total phosphorus was included in a TMDL plan that the EPA approved more than a year ago. A Water Quality Management Plan has been approved for the San Pitch River. Of the four lakes and reservoirs in Category 5A on the 2006 Utah 303(d) list, only Piute Reservoir is not included in a current TMDL plan.

Table A4-1. Utah's 2006 303(d) List of Category 5A: Impaired River and Stream Assessment Units Requiring TMDL Analysis

Water Body Name	Water Body Description	Causes
East Fork Sevier River-4	East Fork Sevier River and tributaries from confluence with Sevier River upstream to Antimony Creek confluence, excluding Otter Creek and its tributaries	Temperature Total phosphorus
Lost Creek	Lost Creek and tributaries from confluence with Sevier River upstream about 6 miles	Total Dissolved Solids (TDS)
Sevier River-6	Sevier River from Clear Creek confluence to Hydrologic Unit Code (HUC) boundary	Temperature
Peterson Creek	Peterson Creek and tributaries from confluence with Sevier River to the United States Forest Service (USFS) boundary	TDS
Lower Ivie Creek	Ivie Creek and tributaries from confluence with Muddy Creek to U-10 highway	TDS

Water Body Name	Water Body Description	Causes
San Pitch River-5	San Pitch River and tributaries from beneficial U132 to Pleasant Creek confluence, excluding Cedar Creek, Oak Creek, Pleasant Creek, and Cottonwood Creek	Temperature
Lower Muddy Creek	Muddy Creek from confluence with Fremont River to Ivie Creek confluence	Selenium

Notes: All but one river and stream assessment unit listed in Table A4-1 are discussed in Water Quality Management Plans and/or TMDL reports that have been prepared for the Utah Division of Water Quality, the Utah Department of Environmental Quality, and the U.S. Environmental Protection Agency (EPA). Coverage is as follows:

1. Ivie Creek is discussed in the Price River, San Rafael River, and Muddy Creek TMDLs for Total Dissolved Solids, West Colorado Watershed Management Unit, Utah, January 2004, prepared by MFG, Inc., Fort Collins, Colorado.
2. Lost Creek and Peterson Creek are discussed in the Draft TMDL Water Quality Study of the Middle and Lower Sevier River Watershed, February 9, 2004, submitted by Tetra Tech, Inc., Water Resources and TMDL Center.
3. East Fork Sevier River 4 and its tributaries are rated a high priority for coverage in a TMDL report or Water Quality Management Plan prepared between 2004 and 2006. This is the only river or stream assessment unit listed in Table A4-1 that is not already covered in a draft or final TMDL report or Water Quality Management Plan.
4. San Pitch River is discussed in the San Pitch River Watershed Water Quality Management Plan, prepared by Millennium Science and Engineering and approved by the EPA November 18, 2004.

Source: UDWQ 2006 303(d) List of Waters.

Table A4-2. Utah's Draft 2004 List of Category 5A—Lakes and Reservoirs Identified as Needing TMDL Analysis

Water Body Name	Water Body ID	Pollutant
Piute Reservoir	UT-L-16030001-011	Total phosphorus
Nine Mile Reservoir	UT-L-16030004-001	Total phosphorus Dissolved oxygen
Otter Creek Reservoir	UT-L-16030002-004	Total phosphorus
Koosharem Reservoir	UT-L-16030002-011	Total phosphorus

Source: UDWQ 2006 303(d) List of Water

APPENDIX 5—LANDS AND REALTY

LAND TENURE ADJUSTMENT CRITERIA

Public lands must meet one or more of the criteria listed below before they can be considered for any form of land tenure adjustment (LTA), including Exchanges, State Indemnity Selection (in lieu of selections), State Grants, Desert Land Entry (DLE), Recreation and Public Purposes Act (R&PP) patents (except Section 203, 206, and 209 of the Federal Land Policy and Management Act [FLPMA] sales), within the Richfield Field Office (RFO) planning area:

1. The LTA is in the public interest and accommodates the needs of state, local, or private entities, including needs for the economy, community growth, and expansion, and are in accordance with other land use goals and objectives and Resource Management Plan (RMP) planning decisions.
2. The LTA results in a net gain of important and manageable resource values on public lands such as crucial wildlife habitat, significant cultural sites, high-value recreation areas, high-quality riparian areas, live water, threatened and endangered species habitat, or areas key to the maintenance of productive ecosystems.
3. The LTA ensures the accessibility of public lands in areas where access is needed and cannot otherwise be obtained.
4. The LTA is essential to allow effective management of public lands in areas where consolidation of ownership is necessary to meet resource management objectives.
5. The LTA results in the acquisition of lands that serve a national priority as identified in national policy directives.
6. In addition to the above criteria, all future land disposal actions will require a site-specific environmental analysis in accordance with the National Environmental Policy Act (NEPA) when an actual LTA action is proposed. A subsequent analysis may reveal resource conditions that could not be mitigated to the satisfaction of the authorized officer and may therefore preclude disposal.
7. All future LTAs must be in conformance with other goals and objectives in the field office RMP, which could preclude LTA. All LTAs will be subject to valid existing rights as determined by the authorized officer.

Table 5-1. Lands Identified for Proposed Sale Under FLPMA Section 203, Sanpete County

Tract	Legal Description	Acres
1	T. 12 S., R. 3 E., Sec. 1, Lots 2-4; S½N½, NW¼SW¼, N½SE¼.	400.56
2a	T. 13 S., R. 2 E., Sec. 12, NE¼NE¼.	40.00
2b	T. 13 S., R. 2 E., Sec. 12, SW¼NE¼.	40.00
2c	T. 13 S., R. 2 E., Sec. 12, N½SW¼.	80.00
3	T. 13 S., R. 2 E., Sec. 13, SE¼NW¼, NE¼SW¼.	80.00
4	T. 13 S., R. 3 E., Sec. 7, SW¼NE¼, SE¼NW¼.	80.00
5a	T. 13 S., R. 3 E., Sec. 19, Lot 4.	39.62
5b	T. 13 S., R. 3 E., Sec. 19, S½NE¼, NW¼NE¼, SE¼NW¼, NE¼SW¼, N½SE¼.	280.00
6	T. 13 S., R. 3 E., Sec. 29, SE¼SE¼.	40.00
7	T. 13 S., R. 4 E., Sec. 15, NW¼NE¼.	40.00

Tract	Legal Description	Acres
8	T. 13 S., R. 5 E., Sec. 31, SE¼NE¼, E½SE¼.	120.00
9*	T. 14 S., R. 3 E., Sec. 12, SW¼NW¼.	40.00
10*	T. 14 S., R. 3 E., Sec. 14, SE¼NE¼, N½SE¼.	120.00
11	T. 14 S., R. 3 E., Sec. 22, SE¼SE¼; Sec. 23, S½SW¼.	120.00
12	T. 14 S., R. 3 E., Sec. 26, N½NW¼, SE¼NW¼.	120.00
13	T. 14 S., R. 3 E., Sec. 27, NW¼, NE¼SW¼, S½SW¼, NW¼SE¼, S½SE¼.	400.00
14	T. 14 S., R. 3 E., Sec. 34, NE¼NW¼.	40.00
15	T. 14 S., R. 5 E., Sec. 7, SE¼NE¼.	40.00
16	T. 15 S., R. 2 E., Sec. 2, Lots 4-9. (Lots 4,5,9 FERC Wdl U-73401)	50.53
17	T. 16 S., R. 1 E., Sec. 34, NW¼NW¼. (OS Wdl PLO 4522, EO5327)	40.00
18a	T. 16 S., R. 2 E., Sec. 1, Lot 3.	40.00
18b	T. 16 S., R. 2 E., Sec. 1, SE¼SW¼.	40.00
19	T. 16 S., R. 2 E., Sec. 12, E½W½.	160.00
20	T. 16 S., R. 2 E., Sec. 13, W½NW¼, N½SW¼.	160.00
21a	T. 17 S., R. 1 W., Sec. 22, NW¼SW¼. (OS Wdl PLO 4522, EO5327)	40.00
21b	T. 17 S., R. 1 W., Sec. 35, W½NE¼, W½SE¼NE¼. (West side of Hwy 28-Supplemental Plat/Cadastral to be requested)	+/-60.00
21c	T. 17 S., R. 1 W., Sec. 35, E½SE¼. (West side of Hwy 28-Supplemental Plat/Cadastral to be requested)	+/-65.00
21d	T. 18 S., R. 1 W., Sec. 1, Lot 4, SW¼NW¼, W½SE¼NW¼. (West side of Hwy 28-Supplemental Plat/Cadastral to be requested)	+/-65.24
21e	T. 18 S., R. 1 W., Sec. 1, E½SW¼. (West side of Hwy 28-Supplemental Plat/Cadastral to be requested)	+/-60.00
22	T. 19 S., R. 1 W., Sec. 13, W½NE¼. (OS Wdl PLO 4522, EO5327)	80.00
23	T. 19 S., R. 1 E., Sec. 1, Lot 4. (NW¼NW¼)	40.17
24a	T. 19 S., R. 1 E., Sec. 5, SE¼SW¼. (U-39313 R&PP SR & Wdl)	40.00
24b	T. 19 S., R. 1 E., Sec. 8, E½SW¼SE¼NE¼, E½W½SW¼SE¼NE¼, SE¼NW¼SE¼NE¼. (U-18351 old landfill)	10.00
25	T. 19 S., R. 2 E., Sec. 15, SE¼NE¼, NE¼SE¼. (OS Wdl PLO 4522, EO5327)	80.00
26a	T. 19 S., R. 2 E., Sec. 17, NW¼NW¼. (OS Wdl PLO 4522, EO5327)	40.00
26b	T. 19 S., R. 2 E., Sec. 18, E½NE¼, NE¼SE¼.	120.00
27**	T. 19 S., R. 2 E., Sec. 30, SW¼SE¼SW¼. (Mayfield Com Site U-68179)	10.00
28	T. 20 S., R. 1 W., Sec. 1, SW¼NW¼. (OS Wdl PLO 4522, EO5327)	40.00
29*	T. 20 S., R. 2 E., Sec. 3, SE¼NE¼. (OS Wdl PLO 4522, EO5327)	40.00
Total Acres Within Sanpete County		**+/-3,401.12**

* Central Region Utah Division of Wildlife Resources (UDWR) selected for anticipated expansion of existing wildlife management areas.

** Mayfield Town, Utah selected for anticipated community expansion.

Table 5-2. Lands Identified for Proposed Sale Under FLPMA Section 203, Sevier County

Tract	Legal Description	Acres
1	T. 21 S., R. 1 W., Sec. 35, N½SW¼, SW¼SW¼.	120.00
2	T. 21 S., R. 1 E., Sec 17, NW¼. (That portion located North of Salina Creek Quarry Ditch/North of existing county-maintained road) (Randy Crane)	+/-10.00
3	T. 21 S., R. 1 E., Sec. 17, SW¼SW¼.	40.00
4	T. 21 S., R. 1 E., Sec. 19, E½NE¼, SW¼NE¼, NW¼SE¼, SE¼ SW¼.	200.00
5	T. 21 S., R. 1 E., Sec. 20, NW¼NW¼. (OS Wdl PLO 4522, EO5327)	40.00
6	T. 21 S., R. 2 E., Sec. 6, SE¼NW¼, NE¼SW¼. (OS Wdl PLO 4522, EO5327)	80.00
7a	T. 22 S., R. 1 W., Sec. 10, SW¼SW¼.	40.00
7b	T. 22 S., R. 1 W., Sec. 10, SE¼.	160.00
8a***	T. 22 S., R. 1 W., Sec. 11, Lots 1-6.	209.71
8b***	T. 22 S., R. 1 W., Sec. 11, Lots 7-10.	158.88
9	T. 22 S., R. 2 W., Sec. 3, Lots 1, 2 and 8.	124.60
10	T. 22 S., R. 2 W., Sec. 27, SW¼SW¼.	40.00
11	T. 22 S., R. 2 W., Sec. 28, S½.	320.00
12	T. 22 S., R. 2 W., Sec. 33, N½, N½S½, S½SW¼, SW¼SE¼.	600.00
13	T. 22 S., R. 2 W., Sec. 34, N½ NW¼.	80.00
14	T. 22 S., R. 3 E., Sec. 5, Lots 3 and 4.	81.92
15	T. 22 S., R. 3 E., Sec. 6, SW¼NE¼.	40.00
16	T. 22 S., R. 3 E., Sec. 7, SE¼NE¼.	40.00
17	T. 22 S., R. 4 E., Sec. 6, NE¼SW¼.	40.00
18	T. 23 S., R. 2 W., Sec. 5, All. (Lots 1-4, S½N½, S½)	640.96
19	T. 23 S., R. 2 W., Sec. 7, Lots 3 and 4.	79.80
20	T. 23 S., R. 2 W., Sec. 7, NE¼, SE¼NW¼. (Winkle Gun Range) (80 acres–OS Wdl PLO 4522, EO5327)	200.00
21*	T. 23 S., R. 2 W., Sec. 23, N½N½NW¼SW¼SE¼, E½SW¼SE¼.	25.00
22	T. 23 S., R. 2 W., Sec. 26, NE¼NE¼. (That portion located Southwest of U.S. Highway 119.)	4.50
23a	T. 23 S., R. 3 W., Sec. 13, E½. (OS Wdl PLO 4522, EO5327)	320.00
23b	T. 23 S., R. 3 W., Sec. 13, N½SW¼, SW¼SW¼. (OS Wdl PLO 4522, EO5327)	120.00
24	T. 23 S., R. 3 W., Sec. 23, N½NE¼.	80.00
25	T. 23 S., R. 5 E., Sec. 20, E½E½NW¼SE¼, S½SE¼SE¼SW¼. (B Johnson TP)	15.00
26	T. 23 S., R. 5 E., Sec. 21, NW¼NW¼SE¼, N½NE¼NW¼SE¼. (B Johnson TP) (Only portion North of Oak Spring Creek as determined by cadastral and depicted on cadastral supplemental plat.)	15.00
27a	T. 23 S., R. 5 E., Sec. 29, S½NE¼SW¼NW¼, SE¼SW¼NW¼. (B Johnson TP)	15.00
27b	T. 23 S., R. 5 E., Sec. 29, Lots 2, 4, 5. (B Johnson TP)	3.72
28	T. 23 S., R. 5 E., Sec. 31, Lot 4, S½SE¼. (B Johnson Sale)	105.58
29**	T. 24 S., R. 2 W., Sec. 19, Lot 3, SE¼NE¼, NE¼SW¼, N½SE¼.	200.00

Tract	Legal Description	Acres
30**	T. 24 S., R. 2 W., Sec. 20, NW¼NE¼, NE¼NW¼, S½NW¼.	160.00
31	T. 27 S., R. 4 W., Sec. 27, SW¼NE¼, NW¼SE¼, N½S½SW¼. (That portion located North and West of county-maintained road) (James K. Kent)	+/- 39.30
32	T. 25 S., R. 4 W, Sec. 33, NW¼SE¼NW¼. (That portion located Northwest of Sevier River) (Richard G. Jones)	+/-2.00
33	T. 25 S., R. 1 E., Sec. 15, SW¼NW¼.	40.00
34	T. 26 S., R. 1 W., Sec. 1, Lots 5-7, SW¼NE¼NE¼, W½W½SE¼NE¼NE¼, W½W½NE¼SE¼NE¼, W½SE¼NE¼, SE¼SE¼NE¼.	63.78
Total Acres Within Sevier County		**+/-4,554.75**

* Town of Glenwood, Utah selected for anticipated community expansion.
** Town of Annabella, Utah selected for anticipated community expansion.
*** Sevier County selected for anticipated community expansion.

Table 5-3. Lands Identified for Proposed Sale Under FLPMA Section 203, Piute County

Tract	Legal Description	Acres
1	T. 27 S., R. 1 W., Sec. 33, W½SW¼.	80.00
2	T. 27 S., R. 3 W., Sec. 21, Lots 4-6.	74.34
3*	T. 27 S., R. 3 W., Sec. 30, SW¼SE¼.	40.00
4*	T. 27 S., R. 3 W., Sec. 31, NW¼NE¼.	40.00
5	T. 27 S., R. 4 W., Sec. 26, Lot 53B. (Roth Life Estate Lease)	4.82
6	T. 28 S., R. 3 W., Sec. 5, Lot 2.	40.27
7	T. 28 S., R. 3 W., Sec. 5, SE¼NE¼.	40.00
8	T.29S., R.3W., Sec. 17, SWSE. (That portion located East of county-maintained road [old Hwy 89 location]) (David E. Sorensen)	+/- 10.00
9	T.29S., R.3W., Sec. 20, E½NE¼, E½NW¼NE¼, SW¼NE¼. (That portion located East of county-maintained road [old Hwy 89 location] or East of Hwy 89) (David E. Sorensen)	+/- 130.00
10	T.29S., R.3W., Sec. 20, N½SE¼, E½SW¼SE¼. (That portion located East of Hwy 89) (David E. Sorensen)	+/- 80.00
11	T.29S., R.3W., Sec. 29, E½W½NE¼. (That portion located East of Hwy 89) (David E. Sorensen)	+/- 20.00
Total Acres Within Piute County		**+/-559.43**

* Town of Marysvale, Utah selected for anticipated community expansion.

Table 5-4. Lands Identified for Proposed Sale Under FLPMA Section 203, Wayne County

Tract	Legal Description	Acres
1	T. 27 S., R. 3 E., Sec. 26, E½E½.	160.00
2	T. 27 S., R. 14 E., Sec. 5, W½SW¼NE¼, E½SE¼NW¼. Subject to U-41592 Intpr 196 Wdl PW Res 107 and site-specific survey (Dan Vacher dba Moore Land & Livestock [existing improvements–Texas Hill])	+/-20.00

Tract	Legal Description	Acres
3	T. 28 S., R. 3 E., Sec. 22, SE¼SW¼. (That portion located West of Hwy 24)	+/-10.00
4*	T. 28 S., R. 3 E., Sec. 25, W½NE¼, NW¼, NE¼SW¼, NW¼SE¼, SE¼.	440.00
5*	T. 28 S., R. 3 E., Sec. 26, N½, NW¼SW¼.	360.00
6*	T. 28 S., R. 3 E., Sec. 27, NE¼, E½W½, NW¼NW¼ (Russell Edwards), W½SE¼, NE¼SE¼.	480.00
7***	T. 28 S., R. 11 E., Sec. 15, SE¼NE¼, SE¼.	200.00
8	T. 28 S., R. 11 E., Sec. 17, SW¼NE¼, SE¼NW¼. (South side of Hwy 24-Supplemental Plat/Cadastral to be requested)	+/-55.00
9***	T. 28 S., R. 11 E., Sec. 21, E½SE¼NE¼, E½W½SE¼NE¼.	30.00
10***	T. 28 S., R. 11 E., Sec. 22, E½.	320.00
11***	T. 28 S., R. 11 E., Sec. 23, All.	640.00
12***	T. 28 S., R. 11 E., Sec. 26, All.	640.00
13***	T. 28 S., R. 11 E., Sec. 27, All.	640.00
14***	T. 28 S., R. 11 E., Sec. 28, SE¼NE¼, N½NW¼, SW¼NW¼, S½.	480.00
15	T. 29 S., R. 4 E., Sec. 5, S½SE¼, SE¼SW¼.	120.00
16	T. 29 S., R. 4 E., Sec. 6, Lots 3-6, SW¼NE¼, SE¼NW¼, E½SW¼, N½SE¼, SW¼SE¼. (Wayne Co. R&PP Lease U-47337–Shooting Range)	438.76
17a	T. 29 S., R. 4 E., Sec. 9, S½N½.	160.00
17b	T. 29 S., R. 4 E., Sec. 9, S½.	320.00
18a	T. 29 S., R. 4 E., Sec. 10, SW¼NW¼.	40.00
18b	T. 29 S., R. 4 E., Sec. 10, SW¼.	160.00
18c	T. 29 S., R. 4 E., Sec. 10, SW¼SE¼.	40.00
19	T. 29 S., R. 4 E., Sec. 13, W½SW¼.	80.00
20a	T. 29 S., R. 4 E., Sec. 14, SW¼NE¼.	40.00
20b	T. 29 S., R. 4 E., Sec. 14, Lots 1-3.	111.07
20c	T. 29 S., R. 4 E., Sec. 14, SE.¼.	160.00
21a	T. 29 S., R. 4 E., Sec. 15, SE¼NE¼.	40.00
21b	T. 29 S., R. 4 E., Sec. 15, N½NW¼. (Except pat #43-76-0006)	+/-195.00
21c	T. 29 S., R. 4 E., Sec. 15, N½SE¼.	80.00
22a	T. 29 S., R. 4 E., Sec. 23, N½NE¼.	80.00
22b	T. 29 S., R. 4 E., Sec. 23, SE¼NE¼.	40.00
23a	T. 29 S., R. 4 E., Sec. 24, N½NW¼. (Allan and Thalia Smart NE¼NW¼)	80.00
23b	T. 29 S., R. 4 E., Sec. 24, SE¼NW¼.	40.00
23c	T. 29 S., R. 4 E., Sec. 24, NE¼SW¼.	40.00
23d	T. 29 S., R. 4 E., Sec. 24, N½SE¼.	80.00
23e	T. 29 S., R. 4 E., Sec. 24, S½SE¼.	80.00
24	T. 29 S., R. 5 E., Sec. 19, Lot 4. (SW¼SW¼)	38.94
25**	T. 29 S., R. 7 E., Sec. 35, W½W½.	160.00

Tract	Legal Description	Acres
26	T. 30 S., R. 5 E., Sec. 3, Lot 3.	40.55
27	T. 30 S., R. 5 E., Sec. 3, E½SE¼SE¼.	20.00
28a	T. 30 S., R. 5 E., Sec. 10, NE¼SW¼SE¼. (That portion located East of U.S. Hwy 12)	5.70
28b	T. 30 S., R. 5 E., Sec. 10, W½SW¼SE¼. (That portion located East of U.S. Hwy 12) (Carcass Creek Properties, LLC)	+/-2.60
29	T. 30 S., R. 5 E., Sec. 11, W½W½. (Less mineral patent 43-77-0006)	+/-160.00
30	T. 30 S., R. 11 E., Sec. 5, SE¼SW¼.	40.00
31	T. 30 S., R. 11 E., Sec. 8, Lot 1, NE¼NW¼.	80.00
32	T. 30 S., R. 11 E., Sec. 8, Lot 4.	40.00
Total Acres Within Wayne County		**+/-7,487.62**

* Bicknell Town, Utah selected for anticipated community expansion.
** National Park Service (NPS)-Capitol Reef National Park selected for anticipated park boundary expansion.
*** Town of Hanksville selected for anticipated community expansion.

Table 5-5. Lands Identified for Proposed Sale Under FLPMA Section 203, Garfield County

Tract	Legal Description	Acres
1*	T. 31 S., R. 7 E., Sec. 34, N½NE¼.	80.00
2*	T. 31 S., R. 7 E., Sec. 34, S½SE¼.	80.00
3	T. 31 S., R. 7 W., Sec. 35, SW¼, W½SE¼, SE¼SE¼.	280.00
Total Acres Within Garfield County		**440.00**

* NPS-CRNP selected for anticipated park boundary expansion.

Table 5-6. Summary, Section 203 Sales, by County

County	Acres +/-
Sanpete County	3,401.12
Sevier County	4,554.75
Piute County	559.43
Wayne County	7,487.62
Garfield County	440.00
Total	**+/- 16,442.92**

Table 5-7. Existing Withdrawals

Withdrawal Type	Legal Description	Acreage
Henry Mountain Administrative Site	T. 28 S., R. 11 E., Sec. 21, NW¼NE¼.	41.21
Administrative Site Withdrawal Total Acres: 41.21		

Withdrawal Type	Legal Description	Acreage
Oil Shale	Sanpete County North Sevier County	106,612.36* 34,532.29*
Oil Shale Withdrawal Total Acres: 141,144.65		
Temporary Power Site Withdrawal #42	T. 26 S., R. 17 E., Sec. 32, E½, E½W½; Sec 33, All; Sec. 34, All; Sec. 35, All.	72.80
Temporary Power Site Withdrawal Total Acres: 72.80		
Federal Energy Regulatory Commission (FERC)–UTU-73084	T. 27 S., R. 3 E., Sec. 3, Lots 2, 3, SW¼NE¼,SE¼NW¼,E½SW¼,SW¼SW¼; Sec. 9, SW¼NE¼.	12.08
FERC–UTU-73401	T. 15 S., R. 2 E., Sec. 2, Lots 5, 9; Sec. 25, Lots 1, 2, 5; T. 16 S., R. 2 E., Secs. 1, 9, 10, 12, 13, 15, 21, 22.	1,195.00
FERC Withdrawal Total Acres: 1,207.08		
Public Water Reserve	T. 28 S., R. 8 E., Sec. 29, SE¼SW¼.	40.0
Public Water Reserve	T. 28 S., R. 11 E., Sec. 6, SE¼NE¼. T. 31 S., R. 9 E., Sec. 15, NE¼NW¼.	40.0 40.0
Public Water Reserve	T. 20 S., R. 1 E., Sec., 35 SE¼SE¼; T. 30 S., R. 2½ W., Sec. 5 Lot 4; T. 30 S., R. 11 E., Sec. 22 NE¼SW¼.	120.0**
Public Water Reserve	Various.	1,040.0**
Public Water Reserve	Various.	378.7**
Public Water Reserve	Various.	191.05**
Public Water Reserve	T. 23 S., R. 1 W., Sec. 13, Lot 2. T. 25 S., R. 1 W., Sec. 35 NE¼SW¼, SE¼NW¼. T. 27 S., R. 3 W., Sec. 12 SW¼SE¼. T. 34 S., R. 10 E., Sec. 24, SW¼NW¼.	32.90 80.0 40.0 40.0
Public Water Reserve	Various.	360.0**
Public Water Reserve	T. 28 S., R. 15 E., Sec. 25 Prot SE¼NW¼ and T. 28 S., R. 16 E., Sec. 7 Prot SE¼NE¼ and Sec. 8, Prot SE¼SE¼.	120.0
Public Water Reserve	Various.	780.0**
Public Water Reserve	T. 32 S., R. 10 E., Sec. 34, NW¼SE¼.	40.0
Public Water Reserve	T. 33 S., R. 11 E., Secs. 11,14, 15, 21, 22, 23.	520.0
Public Water Reserve	T. 31 S., R. 10 E., Sec. 29, SW¼NW¼.	40.0
Public Water Reserve	T. 27 S., R. 2 E., Sec. 6, Lot 5; T. 27 S., R. 14 E., Sec. 5, Lots 3, 4; S½NW¼.	158.12
Public Water Reserve	T. 27 S., R. 3 W., Sec. 1, NE¼SE¼; Sec. 12, SW¼SE¼; Sec 13, NE¼NW¼.	120.0
Public Water Reserve	T. 26 S., R. 1 E., Sec. 29, NW¼NW¼.	40.0
Public Water Reserve	T. 31 S., R. 13 E., Sec. 9, PROT S½NW¼, N½SW¼; Sec. 16, W½NE¼, SE¼NW¼.	280.0

Withdrawal Type	Legal Description	Acreage
Public Water Reserve	T. 31 S., R. 15 E., Sec. 9, PROT N½NW¼; T. 32 S., R. 15 E., Sec. 27, PROT SE¼NE¼, SE¼NW¼; T. 32 S., R. 16 E., Sec. 35, NW¼NW¼.	200.0
Public Water Reserve	T. 27 S., R. 16 E., Sec. 1, NE¼SW¼.	40.0
Public Water Reserve	T. 27 S., R. 1 E., Sec. 1; T. 27 S., R. 2 E., Secs. 6, 33, 34; T. 28 S., R. 2 E., Sec. 10; T. 24 S., R. 5 E., Secs. 5,13; T. 25 S., R. 5 E., Sec. 1, Lot 3; T. 26 S., R. 5 E., Secs. 10, 11; T. 27 S., R. 7 E., Sec. 17; T. 28 S., R. 7 E., Secs. 4, 11, 25; T. 31 S., R. 7 E., Sec. 1; T. 27 S., R. 8 E., Secs. 11, 12; T. 28 S., R. 8 E., Sec. 5; T. 29 S., R. 8 E., Sec. 7; T. 30 S., R. 8 E., Sec. 31; T. 31 S., R. 8 E., Secs. 7, 13, 24, 27; T. 32 S., R. 8 E., Sec. 21; T. 33 S., R. 8 E., Secs. 25, 26, 28, 34 T. 34 S., R. 8 E., Sec. 12; T. 31 S., R. 9 E., Secs. 3, 7, 17, 22, 35; T. 32 S., R. 9 E., Secs. 30, 31; T. 33 S., R. 9 E., Secs. 12, 15, 17, 19, 20, 31; T. 34 S., R. 9 E., Sec. 22; T. 35 S., R. 9 E., Secs. 13, 26; T. 36 S., R. 9 E., Sec. 10; T. 29 S., R. 10 E., Secs. 1, 17, 20, 22, 30; T. 30 S., R. 10 E., Secs. 12, 13, 20, 23, 24, 25, 29, 31, 33, 35; T. 31 S., R. 10 E., Secs. 3–5, 7, 9, 14, 18–20, 24, 26,27,29-31,33,35; T. 32 S., R. 10 E., Secs. 4, 6, 8, 9, 13, 18, 21, 29, 30, 33–35; T. 33 S., R. 10 E., Secs. 5, 8, 13, 23–26; T. 34 S., R. 10 E., Sec. 26; T. 35 S., R. 10 E., Secs. 7, 18, 20, 21, 33, 35; T. 28 S., R. 11 E., Secs. 6, 9; T. 29 S., R. 11 E., Secs. 1, 18, 20; T. 30 S., R. 11 E., Secs. 19, 27, 28; T. 31 S., R. 11 E., Secs. 1, 21, 28; T. 32 S., R. 11 E., Sec. 24; T. 33 S., R. 11 E., Secs. 4, 19, 21, 25, 30, 31; T. 34 S., R. 11 E., Secs. 7, 8, 10, 11, 14, 18, 27; T. 35 S., R. 11 E., Secs. 33, 34; T. 36 S., R. 11 E., Secs. 6, 10, 21, 29;	7,330.0

Withdrawal Type	Legal Description	Acreage
	T. 37 S., R. 11 E., Sec. 9; T. 28 S., R. 12 E., Secs. 9, 27; T. 29 S., R. 12 E., Secs. 30, 33; T. 30 S., R. 12 E., Sec. 4; T. 31 S., R. 12 E., Sec. 3; T. 32 S., R. 12 E., Secs. 1, 3; T. 33 S., R. 12 E., Secs. 27, 33; T. 34 S., R. 12 E., Secs. 8, 33; T. 35 S., R. 12 E., Secs. 9, 18, 19; T. 36 S., R. 12 E., Secs. 3, 9, 16; T. 29 S., R. 13 E., Sec. 7; T. 30 S., R. 13 E., Secs. 9, 30; T. 31 S., R. 13 E., Sec. 33; T. 32 S., R. 13 E., Sec. 31; T. 33 S., R. 13 E., Secs. 4, 5, 15; T. 28 S., R. 14 E., Secs. 23, 34; T. 32 S., R. 14 E., Sec. 35; T. 31 S., R. 15 E., Sec. 4.	
Public Water Reserve	T. 28 S., R. 15 E., Sec. 25 PROT; T. 28 S., R. 16 E., Secs. 7, 8.	120.0
Public Water Reserve	T. 30 S., R. 10 E., Sec. 20, SE¼SE¼.	40.0
Public Water Reserve Total Acres: 12,230.77		

* Approximate acres based on 1981–82 Mountain Valley Planning Area Unit Resource Analysis (URA)
** Approximate acres based on Geographic Information Systems (GIS) extraction of Legacy Rehost 2000 data.

Segregative Effects:

Hanksville Administrative Site: Subject to valid existing rights; temporarily withdrew lands from settlement, sale, location, or entry under the general land laws, including the mining laws, but not leasing under the mineral leasing law.

Oil Shale E.O. 5327, 04/15/1930: Subject to valid existing rights; temporarily withdrew lands containing deposits of oil shale "from lease or other disposal." On 02/06/1933, Executive Order (EO) 6016 modified EO 5327 of 04/15/1930 "to the extent of authorizing issuance of oil and gas permits and leases under the general leasing act of 02/25/1920 (41 Stat. 437-451), for any of the lands withdrawn by said order."

Oil Shale E.O. 4522, 09/13/1968: Subject to valid existing rights; temporarily withdrew in part certain lands containing deposits of oil shale "from appropriation under the U.S. mining laws, relating to metalliferous minerals." Supplements but does not otherwise affect the withdrawal for oil shale made by E.O. 5327 of 04/15/1930.

Temporary Power Site Withdrawal No. 42 - 08/26/1909: Temporarily withdrawn from all forms of entry, selection, disposal, settlement, or location.

Federal Energy Regulatory Commission (FERC)–UTU-73084: Fremont Irrigation Company Application filed 03/04/1994. Order Issuing Preliminary Permit Issued 05/20/1994: Mill Meadow Hydropower Project No. P 11461; Federal Power Act, 16 U.S.C. 791(a)-825 (r). The filing of an application for a power

project with the FERC withdraws the lands covered by the application from the operation of the public land laws; however, the lands remain open to the location, lease, or disposal of the mineral estate. The issuance of a permit or license for a project by the FERC withdraws the lands from the operation of the mining laws (See part 3730).

FERC–UTU-73401: Magma Power Company Application filed 06/17/1994; amended on 07/05/1994; Amended Application accepted by FERC on 07/20/1994. Order Issuing Preliminary Permit Issued 10/20/1994: Big Mountain Modular Pumped Storage Project No. P 11489; Federal Power Act, 16 U.S.C. 791(a)-825 (r). The filing of an application for a power project with the FERC withdraws the lands covered by the application from the operation of the public land laws; however, the lands remain open to the location, lease, or disposal of the mineral estate. The issuance of a permit or license for a project by the FERC withdraws the lands from the operation of the mining laws (See part 3730).

E.O. of 03/29/1912, Public Water Reserve (PWR) No. 1: Public lands are withdrawn from settlement, location, selection, sale, or entry and reserved for public use, and all land within one quarter of a mile of every spring or water hole located on un-surveyed public land, and the same was withdrawn from settlement, location, sale, or entry and reserved for public use.

E.O. of 04/17/1926, PWR No. 107: In accordance with the provisions of Sec. 10 of the Act of 12/29/1916 (39 Stat. 862), and in aid of pending legislation, it was ordered that every smallest legal subdivision of the public land surveys that is vacant, unappropriated, unreserved public land and contains a spring or water hole, and all land within one quarter of a mile of every spring or water hole located on unsurveyed public land, and the same was thereby, withdrawn from settlement, location, sale, or entry and reserved for public use.

Table 5-8. Proposed Mineral Withdrawals and Areas Closed to Disposal, by Alternative

Alternative	Proposed Withdrawals		Closed to Disposal	
Alternative N (No Action)	N. Caineville Mesa Area of Critical Environmental Concern (ACEC)	2,200 ac	Wilderness Study Areas (WSAs)	446,900 ac
	S. Caineville Mesa ACEC	4,100 ac	N. Caineville Mesa ACEC	2,200 ac
	Beaver Wash ACEC	4,800 ac		
	Gilbert Badlands ACEC	3,680 ac		
	Developed Recreation Sites	15 ac		
	Alternative N Total	**14,795 ac**	**Alternative N Total**	**450,700 ac**
Alternative A	(No proposed withdrawals)	0 ac	WSAs	446,900 ac
	Alternative A Total	**0 ac**	**Alternative A Total**	**446,900 ac**
Proposed RMP	N. Caineville Mesa ACEC	2,200 ac	WSAs	446,900 ac
	Old Woman Front ACEC	300 ac	N. Caineville Mesa ACEC	2,200 ac
	Suitable Wild River Corridor	17,400 ac	Old Woman Front ACEC	300 ac
	Developed Campgrounds	15 ac	W&S River Corridor (outside WSAs)	4,400 ac
	Proposed RMP Total	**19,915 ac**	**Proposed RMP Total**	**455,400 ac**
Alternative C	Badlands ACEC*	27,800 ac	WSAs	446,900 ac
	Dirty Devil/North Wash ACEC*	47,400 ac	Badlands ACEC (outside WSA)	48,500 ac

Alternative	Proposed Withdrawals		Closed to Disposal	
	Fremont Gorge/Cockscomb ACEC*	4,500 ac	Bull Creek ACEC	4,800 ac
	Henry Mountains ACEC*	53,400 ac	Dirty Devil/ N. Wash ACEC (outside WSA)	74,600 ac
	Little Rockies ACEC*	11,200 ac	Fremont Gorge/Cockscomb ACEC (outside WSA)	31,500 ac
	Old Woman Front ACEC	300 ac	Henry Mountains ACEC (outside WSA)	158,200 ac
	Rainbow Hills ACEC	3,900 ac	Horseshoe Canyon ACEC (outside WSA)	3,100 ac
	Wild and Scenic River Corridors (outside ACEC withdrawals)	28,000 ac	Kingston Canyon ACEC	22,100 ac
			Little Rockies ACEC (outside WSA)	11,800 ac
			Lower Muddy Creek ACEC	16,200 ac
			Old Woman Front ACEC	300 ac
			Parker Mountain ACEC	107,900 ac
			Quitchupah ACEC	180 ac
			Rainbow Hills ACEC	4,000 ac
			Sevier Canyon ACEC	8,900 ac
			Thousand Lake Bench	500 ac
			W&S River corridors (outside WSAs and ACECs)	360 ac
	Alternative C Total	**176,500 ac**	**Alternative C Total**	**939,840 ac**

*Only portions of these ACECs are proposed for withdrawal from mineral entry.

Table 5-9. Designated Right-of-Way Corridors and Management Specifications – Proposed RMP and Alternatives A, C and D

Serial Number	Name and Type	Corridor Width (ft)
UTU-35442	PacifiCorp (Camp Williams-Sigurd #1) 345-kV Transmission Line	¼ mile each side of centerline
UTU-36797	PacifiCorp (Camp Williams-Sigurd #2) 345-kV Transmission Line	¼ mile each side of centerline
UTU-47994	Garkane Power (Sigurd-Koosharem/ Parker Mountain Substation) 138-kV Transmission Line	¼ mile each side of centerline
UTU-57063	PacifiCorp (Sigurd-Antimony/Arizona) 230-kV Transmission Line	¼ mile each side of centerline
UTU-36469	PacifiCorp (Emery County-Sigurd) 345-kV Transmission Line	¼ mile each side of centerline

Serial Number	Name and Type	Corridor Width (ft)
UTU-22141	PacifiCorp (Huntington-Sigurd) 345-kV Transmission Line	¼ mile each side of centerline
UTU-25670	PacifiCorp (Sigurd to Cedar City/Poverty Flat Area) 230-kV Transmission Line	¼ mile each side of centerline
UTU-081591	PacifiCorp (Sigurd-Sevier) 138-kV Transmission Line	¼ mile each side of centerline
UTU-54534	PacifiCorp (Utah to Nevada) 345-kV Transmission Line	¼ mile each side of centerline
UTU-42692	PacifiCorp (Nebo-Moroni) 138-kV Transmission Line	¼ mile each side of centerline
UTU-14023	PacifiCorp (Sigurd-Nevada State Line) 230-kV Transmission Line	¼ mile each side of centerline
UTU-10657	PacifiCorp (Salt Lake-San Juan County) 345-kV Transmission Line	¼ mile each side of centerline
UTU-60034	Questar (Indianola-Cedar City, Utah) 4",6",8",10" Diameter Buried Natural Gas Line	¼ mile each side of centerline
UTU-0110883 UTU-8966 UTU-059061	Interstate 70	400' each side of centerline
UTU-65090 SL-071443	U.S. Highway 50	400' each side of centerline
UTU-0133352 UTU-0053116 UTU-12035	U.S. Highway 89	400' each side of centerline
SL-0062873 SL-0062677	State Highway 10	400' each side of centerline
UTU-013504 SL-063829 SL-062996 SL-052444 SL-052391 SL-052445 SL-0062023	State Highway 24 (Proposed RMP, Alternatives A and C only)	400' each side of centerline
SL-052391	State Highway 25	400' each side of centerline
SL-051932	State Highway 28	400' each side of centerline
UTU-059936 UTU-036663 SL-067357	State Highway 62 (Proposed RMP Alternatives A and C only)	400' each side of centerline
SL-0062804 UTU-004057	State Highway 119	400' each side of centerline
SL-0062891 UTU-019925 SL-067882	State Highway 132	400' each side of centerline

Serial Number	Name and Type	Corridor Width (ft)
UTU-44286	State Highway 153	400' each side of centerline
UTU-0147162	State Highway 95 (To Hite Crossing) (Proposed RMP, Alternatives A and C only)	400' each side of centerline
UTU-1088	State Highway 276 (To Bullfrog) (Proposed RMP, Alternatives A and C only)	400' each side of centerline

All right-of-way (ROW) corridors listed above (Table 5-9) would be managed with the following conditions of use:

1. The road or highway within the ROW corridor would be used to the maximum extent possible for construction and maintenance of new ROWs.
2. Whenever feasible, compatible facilities (e.g., roads, pipeline, and telephone lines) would be located within or adjacent to existing ROW areas.
3. To the maximum extent possible, roads needed for construction of a new ROW would be temporary and fully rehabilitated once construction is completed. When possible, existing transmission line access roads would be used. If a road is needed for long-term operation and maintenance, it must be specifically authorized by a ROW.
4. All land disturbed by new ROWs, except authorized new access roads, would be rehabilitated to as close to natural conditions as possible.
5. Transmission line ROWs would be located adjacent to each other or as close as possible as allowed under utility standards for safety and reliability.
6. Where feasible, buried telephone and fiber optic cable lines would be close to existing roads and highways and generally within the road ROW area.
7. All ROWs must comply with the applicable visual resource management (VRM) classification objectives.
8. Existing major ROWs noted in Table 5-9, shall be recognized as designated corridors. New ROWs would be restricted to within or adjacent to these corridors whenever feasible. New ROWs proposed within or adjacent to segments of corridors that are located within special designations (e.g., ACECs, WSAs, and wild and scenic rivers [WSRs]), would comply with requirements of the relevant designation.

NOTE: Section 368 of the Energy Policy Act of 2005 (designation of West-wide energy corridors) is being implemented through the current development of an interagency programmatic environmental impact statement (PEIS). The PEIS will address numerous energy corridor related issues, including the utilization of existing corridors (enhancements and upgrades), identification of new corridors, supply and demand considerations, and compatibility with other corridor and project planning efforts. It is likely that the identification of corridors in the PEIS will affect the RFO, and the decisions in the approved PEIS will be carried forward into the Richfield Approved RMP. Thus, additional corridors not identified in Table 5-9 could be designated.

Table 5-10. Existing Communication Sites

Site Name	Location	Holder	Types of Use	Type of Authorization
Steens Meadow	T 30 S, R 2 W Secs. 20, 21	UTU-0147177 Town of Antimony	Microwave	1911 Act Right-of-way Grant

Site Name	Location	Holder	Types of Use	Type of Authorization
South Creek Ridge	T 32 S, R 10 E Sec. 5	UTU-68169 Aspen Achievement Academy	Private Mobile Radio Service	FLPMA Title V Right-of-way Grant
		UTU-58602 BLM	Microwave, PMRS, Passive Reflector	Federal Reservation
		UTU-72931 Dixie National Forest	Microwave, PMRS, Passive Reflector	Federal Reservation
		UTU-72917 Capitol Reef National Park	Microwave, PMRS, Passive Reflector	Federal Reservation
Bulldog Ridge	T 33 S, R 10 E Sec. 10	UTU-68989 Beehive Telephone Company	Microwave	FLPMA Title V Right-of-way Grant
Copper Ridge	T 32 S, R 10 E Sec. 1	UTU-58601 BLM	Microwave, PMRS, Passive Reflector	Federal Reservation
Miners Mountain	T 30 S, R 6 E Sec. 26	UTU-80704 Capitol Reef National Park	Private Mobile Radio Service	Federal Reservation
Bullfrog Basin	T 37 S, R 11 E Sec. 33 T 38 S, R 11 E Secs. 4, 5, 7, 8	UTU-9987 Citizens Telecommunications Company of Utah	Microwave, Cellular, Local Exchange and buried cable	1911 Act Right-of-way Grant
Parker Ridge	T 27 S, R 1 E Sec. 9	UTU-0101227 Dixie National Forest	Private Mobile Radio Service	44 LD 513
Black Ridge	T 29 S R 4 E Sec. 18	UTU-55037 Wayne County	Private Mobile Radio Service	FLPMA Title V Right-of-way Grant
		UTU-47315 Hanksville Telecommunications Inc	Microwave	FLPMA Title V Right-of-way Grant
		UTU-47342 State of Utah	Microwave, Private Mobile Radio Service (DAS/ITS)	FLPMA Title V Right-of-way Grant
		UTU-51870 Fishlake National Forest	Microwave, Cellular	Federal Reservation
		UTU-72908 WWC Holding Co (Western Wireless)	Cellular	FLPMA Title V Right-of-way Grant
		Beehive Telephone	Cellular	FLPMA Title V Right-of-way Grant
Hanksville	T 28 S, R 11 E Sec. 5	UTU-47316 Hanksville Telcom Inc.	Microwave	FLPMA Title V Right-of-way Grant

Site Name	Location	Holder	Types of Use	Type of Authorization
	Sec. 15	Hanksville Town	Radio Repeater	FLPMA Title V Right-of-way Grant
		UTU-47314 Wayne County	TV Translator, Emergency Medical Services Cross-Band Repeater, FM Translator, Private Mobile Radio Service	FLPMA Title V Right-of-way Grant
Mayfield	T 19 S, R 2 E Secs. 30, 31	UTU-68179 Mayfield Town	TV Broadcast, microwave	FLPMA Title V Right-of-way Grant
Mt. Ellsworth	T 35 S, R 12 E Sec. 2	UTU-6847 Glen Canyon Nat'l Park Service	Private Mobile Radio Service	44 LD 513
Antimony	T 31 S, R 2 W Sec. 21	UTU-124747 PacifiCorp	Microwave	1911 Act Right-of-way Grant
Marysvale	T 26 S, R 4 W Sec. 26	UTU-096474 PacifiCorp	Microwave, Private Mobile Radio Service	1911 Act Right-of-way Grant
		UTU-72948 Department of Energy	Seismograph Station	FLPMA Title V Right-of-way Grant
Junction	T 30 S, R 3 W Secs. 7, 8, 17	UTU-28224 Piute County	TV Relay Station	1911 Act Right-of-way Grant
Marysvale Peak	T 26 S, R 4 W Sec. 26	UTU-142160 Piute County	TV Relay Station	1911 Act Right-of-way Grant
Mt. Pennell	T 35 S, R 11 E Secs. 26, 27, 34	UTU-51872 Plateau Resources Limited	Private Mobile Radio Service	FLPMA Title V Right-of-way Grant
Glenanna	T24 S, R 2 W Secs. 4, 9	UTU-144755 Qwest Corporation	Passive Reflector	1911 Act Right-of-way Grant
	Secs. 4, 9	UTU-46781 Sanpete County Broadcast	FM Radio, Cellular, Commercial Mobile Radio Service	FLPMA Title V Right-of-way Grant
Gunnison	T 18 S, R 2 E Secs. 29, 31	UTU-144801 Qwest Corporation	Microwave, Private Mobile Radio Service	1911 Act Right-of-way Grant
Bull Claim Hill	T 24 S, R 2 W Sec. 4	UTU-57755 Richfield Irrigation and Canal Company	Telemetry Radio Repeater	FLPMA Title V Right-of-way Grant
San Pitch Mountain	T 18 S, R 2 E Sec. 31	UTU-47324 Sanpete County	FM Radio,	FLPMA Title V Right-of-way Grant
Koosharem	T 27 S, R 1 E Secs. 8, 9	UTU-57015 Sevier County	TV Translator	FLPMA Title V Right-of-way Grant
Grover-Miners Mountain Mine Shaft	T 30 S, R 6 E Sec. 17	UTU-45952 University of Utah	Seismograph Station	FLPMA Title V Right-of-way Grant

Site Name	Location	Holder	Types of Use	Type of Authorization
Caineville	T 28 S, R 9 E, Sec. 24	UTU-3722 Wayne County	TV Broadcast	1911 Act Right-of-way Grant
West Loa	T 28 S, R 2 E Sec. 4	UTU-51880 Wayne County	TV Broadcast	FLPMA Title V Right-of-way Grant
Mt Ellen/South Summit Ridge	T 31 S, R 10 E, Sec. 34	UTU-72956 WWW Holding Company Inc. (Western Wireless)	Cellular, Private Mobile Radio Service, Amateur Radio	FLPMA Title V Right-of-way Grant
Browns Knoll	T 33 S, R 11 E, Sec. 18	UTU-80716 University of Utah	Seismograph Station	FLPMA Title V Right-of-way Grant
Runts Knob	T 29 S, R 15 E, Sec. 8	UTU-80721 University of Utah	Seismograph Station	FLPMA Title V Right-of-way Grant

Table 5-11. Shooting Ranges Authorized on Public Land

Lessee	Legal Description	Acreage
Town of Hanksville	T. 28 S., R. 11 E., Sec. 9, S½NE¼NW¼SE¼, NE¼SE¼NW¼SE¼, SW¼NE¼SE¼.	17.5
Wayne County	T. 29 S., R. 4 E., Sec. 6, within portions of NW¼, NE¼, SW¼.	25.0
Gunnison City	T. 19 S., R. 1 E., Sec. 5, SE¼SW¼.	40.0
Utah Rifle & Pistol Association	T. 25 S., R. 3 W., Sec. 19, Lot 4 T. 25 S., R. 3 W., Sec. 24, SE¼SE¼, E½SW¼SE¼.	120.0

Table 5-12. Culinary Water Sources Authorized on Public Land

ROW Serial Number	ROW Holder	Legal Description	Acreage
UTU-456	William Murray	T. 27 S., R. 3 W., Sec. 7.	1.72
UTU-21327	Town of Kingston	T. 30 S., R. 3 W., Sec. 24.	85.00
UTU-23664	Utah Division of Water Resources (Greenwich)	T. 27 S., R. 1 W., Sec. 35.	400
UTU-26547	Town of Annabella	T. 24 S., R. 2 W., Sec. 19.	3.3
UTU-30906	Utah Division of Water Resources (Town of Lyman)	T. 27 S., R. 3 E., Sec. 35; T. 28 S., R. 3 E., Sec. 3, 4.	4.28
UTU-32112	Town of Bicknell	T. 28 S., R. 3 E., Sec. 25.	2.5
UTU-32473	Town of Loa	T. 28 S., R. 2 E., Sec. 3.	5.11
UTU-38454	Aurora City	T. 22 S., R. 1 W., Sec. 6.	3.45
UTU-46494	Town of Sigurd	T. 23 S., R. 1 W., Sec. 6, 21, 28.	16.58

ROW Serial Number	ROW Holder	Legal Description	Acreage
UTU-47312	Kings Meadow Ranches	T. 23 S., R. 1 W., Sec. 28.	1.00
UTU-47346	City of Aurora	T. 22 S., R. 2 W., Sec. 1.	1.0
UTU-57066	Caineville Special Service District	T. 28 S., R. 8 E., Sec. 33.	8.3
UTU-63477	Town of Koosharem	T. 26 S., R. 1 E., Sec. 30.	1.00
UTU-68964	Town of Bicknell	T. 29 S., R. 3 E., Sec. 3.	70.00
UTU-77186	Town of Hanksville	T. 29 S., R. 11 E., Sec. 1.	0.23
UTU-79482	Town of Antimony	T. 31 S., R. 2 W., Sec. 19.	1.00
SL-052445	Federal Highway Administration	T. 26 S., R. 1 E., Sec. 29.	Part of a larger ROW for a rest stop

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APPENDIX 6—WILDLAND FIRE MANAGEMENT

GENERAL RISK CATEGORIES

General Risk Category A

Category A includes areas where fire is not desired at any time and where mitigation and suppression are required to prevent direct threats to life or property. In addition, Category A includes areas where fire has never played a major role historically in the development and maintenance of the ecosystem (e.g., vegetative communities such as blackbrush ecosystems and shadscale ecosystems), and some areas where fire return intervals were very long (such as spruce communities). Other examples are very mesic sites and very xeric sites.

Emphasis will be placed on those actions that will reduce unwanted ignitions and reduce losses from unwanted wildland fires.

Emphasis will be placed on prevention, detection, and rapid suppression response and techniques. Non-fire fuel treatments will be used.

General Risk Category B

Category B includes areas where wildland fire is not desired because of current conditions. It includes areas where fire may naturally have performed an important role in the ecosystem function, but because of current resource concerns and potentially high economic impacts from unplanned ignitions (including in some wildland/urban interface areas), considerable constraints and mitigation measures are required. Sagebrush ecosystems, for example, can fall into this category because of encroachment of cheatgrass or a prolonged lack of fire that leads to large monotypic stands of sagebrush that will not burn as they would have historically.

The appropriate management response is usually aggressive suppression response and techniques.

Response will emphasize prevention and mitigation programs that reduce unwanted fire ignitions and resource threats.

Fuels reduction is a major means of mitigating the potential risks and losses. Fire and non-fire fuels treatments are used to reduce the hazardous effects of wildfire. Prescribed fire projects are often complex and costly because of stringent contingency planning. Hazardous fuel treatments may consist of multiple non-fire treatments before fire will be used.

General Risk Category C

Category C includes areas where wildland fire use is desired, but significant constraints must be considered for its use. Ecological, social, or political constraints must be considered prior to wildland fire use. These constraints could include air quality, threatened and endangered species considerations (e.g., effect of fire on survival of species), or wildlife habitat considerations. Resource considerations will be described for each Fire Management Unit in the annual update of the Fire Management Plan.

In multiple wildland fire situations, Category C areas would generally receive lower suppression priority than category A or B areas.

Fire and non-fire fuels treatments will be used to reduce the hazardous effects of wildland fire. Prescribed fire treatments for hazard reduction are a lower priority than in the category A or B areas.

General Risk Category D

Category D includes areas where wildland fire use is desired, and there are few or no constraints. In these areas, fire is an integral component in maintaining or achieving the desired vegetative condition for affected lands, and there are fewer mitigation requirements or resource constraints. Wildland fires may be managed to meet resource management objectives under an approved Fire Management Plan.

Areas in this category would have the lowest suppression priority in a multiple fire situation.

There is generally less need for hazardous fuel treatments in Category D areas. If treatment is necessary, however, all fire management activities may be used.

FIRE ECOLOGY OF MAJOR COVER TYPES

The way in which fire affects vegetation is an important component of this appendix; it is that direct relationship that influences many of the effects on other resources. The existing vegetation communities reflect evolutionary processes, natural disturbance, recent climatic trends and patterns, historic fire management, (e.g., suppression), and other land use practices (e.g., livestock grazing) that directly affect fuel loading, community composition (e.g., invasive concerns such as cheatgrass, knapweeds, tall peppergrass), and fire return intervals.

Historically, fire played an essential role in the landscape that helped define species composition, structure, and productivity (Bradley et al. 1992, Paysen et al. 2000). Therefore, many plants that make up these communities are adapted to withstand wildfire through a variety of anatomical or physiological mechanisms. However, over the past century, aggressive fire suppression efforts, introduction of exotics (e.g., cheatgrass), juniper encroachment, and some land management practices have altered the fire ecology and dynamics of successional processes across the Richfield Field Office (RFO). Therefore, current-day fire return intervals for many vegetation communities have changed in comparison with historic patterns because of a drastic decrease in fire occurrence and size (Brown 2000). Understanding the fire ecology of the major vegetation cover types is important to reintroducing wildland fire into the environment and restoring natural fire regimes, as well as to understanding the impacts from the proposed decisions. The remainder of this appendix addresses the fire ecology of the dominant vegetation cover types in the RFO.

Desert Shrub

Desert shrub composes nearly half of the vegetation acreage of the RFO, including most of the lower elevation public lands east of Capitol Reef National Park. Located primarily on the valley floors, this vegetation community is most common on well-drained, sandy to rocky soils; however, it can tolerate saline and alkaline soils. Desert shrub is characterized by salt-tolerant succulent shrubs including greasewood, seepweed, ephedra, shadscale, four-wing saltbush blackbrush, and threadleaf rubber rabbitbrush. A single or a few species dominate large areas, creating homogeneous landscapes. There is very sparse vegetation in the interspaces in intact native communities. Biological crusts are usually present and cover most of the interspaces between shrubs in intact, native species-dominated salt desert shrub communities. Cheatgrass expansion into this vegetation type poses a serious threat because it provides a continuous understory of fine fuel and reduces fire return intervals in otherwise non-fire-adapted communities.

Fire Ecology

The desert shrub community is not a fire-adapted community because most shrub species are fire sensitive. Even low-intensity fires can kill most species because most do not resprout or resprout weakly. A lack of continuous cover (e.g., fuels) has made historic fire rare to non-existent. Historically, these communities did not burn often enough or in large enough patches to support dominance of fire-adapted plants. Saltbush communities, however, are considered fire tolerant primarily because saltbush and many of its grass associates resprout vigorously and recover quickly (Evers 1998). In areas with a high percentage of cover of desert grasses, low-intensity fires may have been more common than in more shrub-dominated areas.

Fires in blackbrush were historically infrequent, and this vegetation community is characterized by Fire Regime V and Condition Class 2. This ecosystem is at moderate risk of losing key ecosystem components because of fire.

Recent experience on Utah Bureau of Land Management (BLM) land has shown that blackbrush does not respond favorably to fire. In addition, most of the blackbrush in Utah has suffered substantial dieback because of recent ongoing drought conditions. Burning has promoted succession to grassland by destroying the biological crust that stabilizes the soil. The biological crust provides important soil microflora apparently required for blackbrush survival or reestablishment (Paysen et al. 2000). Frequent large fires can be problematic from a management standpoint because recovery can take more than four decades or, in some cases, not occur at all (Wright and Bailey 1982, Paysen et al. 2000). Fire frequently destroys blackbrush seed banks and mature shrubs.

Fire frequency in the desert shrub communities has been estimated at 35 to more than 300 years for the desert shrub vegetation type (USDA Forest Service 2004). Because of the risk of losing key ecosystem components and greatly increased fire regimes as invasive annual grasses (e.g., cheatgrass) dominate, desert shrub is typically classified as Fire Regime Condition Class 3.

Pinyon-Juniper

Pinyon-juniper woodlands make up more than 25 percent of the vegetation cover in the RFO. It is estimated that pinyon and juniper woodlands have increased 10-fold over the past 130 years throughout the Intermountain West (Miller and Tausch 2001). Forest Inventory and Analysis data collected in the RFO revealed that more than 67 percent of identified plots had a stand age of less than 150 years. Throughout the RFO, this age discrepancy is indicative of juniper woodland expansion to more than 60 percent of its historic range. This expansion is largely a result of historic fire suppression in range communities, primarily grasslands and sagebrush, as well as a reduction of fine fuels that allowed fire to regularly remove young trees from grass/sagebrush ecosystems.

Juniper is considered a climax species for a number of pinyon-juniper, sagebrush steppe, and shrub steppe habitats. Old-growth pinyon-juniper is often restricted to fire-safe habitats, e.g., steep, dissected, and rocky terrain. Old-growth pinyon-juniper can be characterized by large trees, the presence of extensive dead woody material, increased number of canopy layers, rounded canopies, large lower limbs, and large, irregularly shaped and deeply furrowed trunks (Miller et. al. 1999, Miller & Rose 1999).

Pinyon-juniper stands that are most likely to burn are characterized by small, scattered trees with abundant herbaceous fuel between the trees, or dense, mature trees capable of carrying crown fire during dry, windy conditions. Stands of moderate tree density, where overstory competition reduces the herbaceous fuel, and the trees are more widely spaced, are unlikely to burn. Closed pinyon-juniper stands do not have understory shrubs to carry a surface fire, and do not burn until conditions are met to carry a

crown fire. Trees taller than four feet in open pinyon-juniper stands are difficult to kill unless there are heavy accumulations of fine fuel beneath the trees. Because of the lack of undergrowth to act as fuel on dry sites, fire may never have been as important an influence as climatic fluctuations in governing the rate of tree replacement of shrubland or grassland. Moister, more productive sites probably have had more extensive and frequent fires when drought periods occurred. The steady increase in crown fuels has allowed burning through areas with deep soils (formerly sagebrush communities) at higher than normal intensities. These sites have never experienced such intensities and therefore are not adapted to this new fire regime.

Fire Ecology

Most of the area where pinyon-juniper currently dominates was historically characterized by fires burning every 15 to 50 years (Miller and Tausch 2001). Pinyon-juniper in Utah is typically described by Condition Class 2 (elevations greater than 7,000 feet) or 3 (elevations less than 7,000 feet). Areas of Condition Class 3 are characterized by dense stands of pinyon-juniper, scarce understory, and high potential for cheatgrass invasion following fire. Condition Class 2 areas have encroaching pinyon-juniper but are less dense than Condition Class 3 and are at less risk of cheatgrass invasion following fire. Areas of old-growth pinyon-juniper have experienced fire frequencies of 200 to more than 300 years (Goodrich and Barber 1999) and would be classified as Fire Regime V. However, this old-growth component is estimated to be less than 10 percent of the current area classified as pinyon-juniper (Miller and Tausch 2001).

Surface fires readily kill thin-barked young pinyon and juniper trees and have been relatively frequent historically in areas on which juniper has now encroached. It is generally agreed that fire was the most important natural disturbance that impacted the distribution of juniper and/or pinyon-juniper woodlands before the introduction of livestock in the 19th century (Miller and Rose 1999). Burkhardt and Tisdale (1976) concluded that fire frequencies of 30 to 40 years would control juniper expansion into mountain big sagebrush communities.

Sagebrush

Sagebrush cover types compose about 16 percent of the RFO. Historically (e.g., presettlement) sagebrush steppe is estimated to have dominated as much as 30 percent of the RFO. Sagebrush has been lost because of juniper encroachment, historical seedings for forage production (e.g., crested wheatgrass), and cheatgrass conversion.

Because seral diversity applies to sagebrush, a considerable portion of the acreage listed under perennial grasslands (native) and areas with recent sagebrush seedings may be considered as representing the early seral component of sagebrush communities. Healthy sagebrush is a patchwork mosaic of seral communities that range from recovering perennial grass-shrublands following natural fire, to old growth, decadent sagebrush steppe with high canopy cover and reduced herbaceous understory. In the past 100 years, the extent of sagebrush has been greatly reduced because of conversion to irrigated agriculture, livestock grazing, juniper encroachment, cheatgrass conversion, and the deliberate eradication of sagebrush for range improvement.

Low-elevation sagebrush, generally found below 6,500 feet, is dominated by basin big sagebrush and Wyoming big sagebrush. Mid-elevation sagebrush occurs at mid to high elevations (greater than 7,000 feet), is characterized by dominance of mountain big sagebrush, and appears less vulnerable to conversion to annual grasslands than low-elevation shrub steppe. On the other hand, mid-elevation sagebrush steppe is more vulnerable to encroachment of juniper as a result of fire suppression compared with lower-elevation sagebrush. Grass and forb species associated with these low- and mid-elevation sagebrush

communities assist with the spread of fire. When domestic livestock are heavily grazed in sagebrush communities, the understory becomes sparse and can prevent the spread of fire. Ignition probabilities have also declined substantially because of the lack of fine grass fuels.

Fire Ecology

Fire frequency in sagebrush varies for the different sagebrush species but is considered to be between 10 and 110 years depending on precipitation, elevation, and sagebrush species. Presettlement stand-replacing fire frequencies for low-elevation sagebrush are estimated to vary from 60 to 110 years (Whisenant 1990, Peters and Bunting 1994). For mountain big sagebrush, presettlement stand-replacing fire frequencies have been estimated to vary between 10 and 25 years (Houston 1973, Harniss and Murray 1973). Wyoming sagebrush communities burned about every 40 years. Sagebrush is considered to be in Condition Class 2 if it is above 6,500 feet and Condition Class 3 if it is below 6,500 feet because of the high risk of losing key ecosystem components resulting from cheatgrass invasion following fire.

The cold-desert climate, with cold, wet-to-dry winters and springs, and dry, hot summers predispose sagebrush communities to an evolutionary history with recurring fire. Wright et al. (1979) surmised that the interval between fires must have been sufficiently long for big sagebrush, which does not resprout and recolonizes from seeds, to regain dominance.

Most sagebrush species do not sprout after fire, and most plants are killed by low- to high-intensity fires. This is true of all three subspecies of big sagebrush common throughout the RFO. Generally, the herbaceous understory composition does not determine the intensity and severity of wildland fires; sagebrush itself is the primary fire carrier. The high canopy cover associated with late mature sagebrush stands likely facilitated stand-replacing fires historically. However, the prefire understory is an important determinant of post-fire response. Because sagebrush seeds generally are not transported far from the parent, unburned areas within large burn areas are often the most important source of seed material for natural recruitment and reestablishment of sagebrush.

Grassland

Grasslands in the RFO include native perennial grasslands and seedings of native species and exotic perennial grasses, primarily crested wheatgrass; and some cheatgrass is classified as grassland. Cheatgrass is discussed more extensively below.

Crested wheatgrass-dominated grasslands are the deliberate result of historic range improvement projects and post-fire seedings. Other perennial grasslands have expanded in portions of the RFO as a result of the eradication of shrubs, especially sagebrush species or by wildland fires on relatively good condition rangelands where cheatgrass did not invade or does not dominate. Native perennial grasslands are an intermediate successional stage that would eventually return to a diverse sagebrush steppe habitat if allowed to recover for extended periods (e.g., 20 to 70 years) without impacts from wildland fires. Native perennial grass species include Idaho fescue, bluebunch wheatgrass, needlegrass, grama grass, and Indian ricegrass.

Perennial grasslands dominated by crested wheatgrass and/or other non-native species are stable communities that do not trend toward recovery to sagebrush steppe habitat as quickly as native perennial grasslands. Historically, native perennial grasslands would have formed part of the seral mosaic of the sagebrush steppe habitat, although it is unclear how widespread they once may have been across the landscape.

Fire Ecology

Because native grasslands are often seral to sagebrush, fire regimes are similar. Perennial grasses respond vigorously to fires of various intensities by resprouting from basal growing points. The primary determinant of fire response in native perennial grasslands is fire residence time. Fast, high-intensity fires have a short residence time and seldom cause substantial mortality to native perennial bunchgrasses. Slow backing fires have a longer residence time and greater severity; mortality to native perennial bunchgrasses may be high under these conditions. With most natural ignitions, the predominant fire spread would be as a fast moving head fire.

Mountain Shrub

Mountain shrub occupies about 2 percent of the RFO and occurs as a transition vegetation type between mid-elevation sagebrush and conifer vegetation types. This cover type is found at moderately high elevations (7,000–8,500 ft.). Mountain shrub is usually found on north and east slopes that tend to be cooler and moister than south and west aspects. Mountain shrub is a highly diverse community: Gambel oak, chokecherry, serviceberry, currant, mountain snowberry, elderberry, and mountain sagebrush. With its characteristically high productivity and diverse herbaceous understory, it provides important biodiversity, wildlife habitat, and protective ground cover to the ecosystem.

The range of most mountain shrub species has been shrinking as a result of fire exclusion and overgrazing by ungulates. Pinyon-juniper and sagebrush have encroached into sites where fires would have historically prevented their spread into the mountain shrub community. The range of Gambel oak, however, is estimated to be greater today than it was historically (Brown 1958, Christensen 1949, Christensen 1957).

Fire Ecology

Stand-replacing fire frequency ranges from 25 to 100 years in mountain shrub (Loope and Gruell 1973), although return intervals may vary widely with changes in elevation, aspect, site moisture, and the associated forest or woodland type. Fire regimes in mountain shrub cover types vary depending on the dominant species. Condition classes also vary depending on the dominant species, although most mountain shrub communities are in Condition Class 2 because of some missed fire return intervals, moderate risk of losing key ecosystem components, and moderately altered vegetation attributes. However, some mountain shrub communities at lower elevations (below 6,500 feet) are classified as Condition Class 3 because of their high risk of cheatgrass invasion following fire.

All species of mountain shrubs resprout after fire except mountain sagebrush. Mountain shrub communities generally recover rapidly following wildland fire and are considered to be fire tolerant.

Ponderosa Pine

Ponderosa pine occupies less than 2 percent of the RFO, mainly located in the Henry Mountains. Ponderosa pine communities are naturally characterized by an open, savannah-like appearance in which widely spaced large trees are present with open understories that are periodically cleared by low-intensity ground-fires.

Historically, frequent low-severity fire probably restricted the accumulation of large downed woody fuels. Fine fuels (e.g., grasses and needles) were the medium through which historical fires spread because most large fuels (e.g., limbs and trunks) would have been consumed by the frequent fires. Historic land management practices, along with fire exclusion, have created stand conditions that were rare or non-existent prior to European settlement. The absence of disturbance has encouraged a conversion to a higher

proportion of shade-tolerant species such as Douglas fir and white fir. These stands are in the mid- to mature-age classes, overly dense, and more susceptible to insect and disease epidemics (Fule et al. 1997). The steady accumulation of tree biomass has contributed to progressively declining herbaceous productivity. Ladder fuels are well developed and contribute to unwanted wildland fires outside the historical range of intensity and severity.

Fire Ecology

Mature ponderosa pines have thick bark, which protects them from serious damage from surface fires. It is considered to be the most fire-adapted conifer in the west (Bradley et al. 1992). Fire frequency for ponderosa pine communities ranges from 10 to 40 years, with low- to mixed-severity (USDA Forest Service 2004) fires. Ponderosa pine forests in the RFO are classified as Fire Regime I and Condition Class 3. These forests have typically missed up 5 to 10 fire cycles in the years of fire suppression and are at risk of stand-replacing canopy fires.

Mixed Conifer

Major forest community types of mixed conifer include Douglas fir, Engelmann spruce, and sub-alpine fir. These communities occupy more than 1 percent of the RFO and generally occur at elevations above 7,000 feet. These forest types do, however, have a high value for recreation, aesthetics, and special and status species habitat. Forest composition varies with elevation, exposure, and latitude. Fire frequency varies with summer dryness and lightning occurrence and also depends on slope, aspect, elevation, and natural fire barriers.

Because of selective logging practices over the last 100 years, favoring the removal of ponderosa pine and Douglas fir, and fire exclusion, these stands are now dense and even-aged. Once adapted to a more frequent fire regime, they are now predisposed to endure high-intensity fires from the development of ground and ladder fuels. Stand-replacing fires outside the historical range of intensity and severity are likely. Closed stands with dense Douglas fir understories present the highest fire hazard. Stands may have large amounts of downed twigs and small branchwood. Dense overstory trees and the presence of dead branches near the ground create a crown fire potential under severe burning conditions.

Fire Ecology

Fire frequencies range from 100 to 300 years, and these forests are often characterized by a combination of understory and complete stand-replacement fire regimes (Arno 2000). Because of the longer historic fire return intervals and well-functioning vegetation attributes, mixed conifer is classified as Condition Class 1 when associated with Fire Regime IV and Condition Class 2 when associated with Fire Regime III.

This mixed severity fire regime often results in a mosaic pattern of stand structure and fuels. Past stand burn mosaics tend to increase the probability that subsequent fires will also burn in a mixed pattern (Arno 2000). Dead woody fuels accumulate on the ground, often in a haphazard manner, and the greatest fuel loadings tend to occur on the most productive sites, which are predominantly stand-replacement fire regimes.

Aspen

Aspen-dominated communities occupy less than 1 percent of the RFO. Aspen communities can be climax or seral to conifer communities (e.g., Douglas fir) and are found between elevations of 6,500 feet and 10,500 feet. Aspen occurs as pure stands or in association with various conifers. Although conifer invasion is a natural pattern in many aspen stands, because of long-term fire suppression throughout the

RFO, it has resulted in increased representation and dominance by conifer in aspen stands, thus reducing the extent of aspen-dominated stands (Mueggler 1989). The absence of fire, coupled with excessive browsing of young aspen trees by livestock and wildlife, has led to rapid replacement of aspen communities by conifer forests (Bartos 1998). However, the presence of conifers does increase aspen stand flammability and therefore may be essential to carrying the fire to regenerate aspen on the site. Brown and Simmerman (1986) found that livestock grazing reduces fine fuels so that fire intensity and rates of spread may be as low as one-tenth that of ungrazed stands.

Areas with small amounts of aspen in a stand may indicate that the area was once dominated by aspen (Bartos and Campbell 1998). Throughout national forests in Utah, including the adjacent Fishlake National Forest, aspen-dominated landscapes have declined by about 60 percent (Bartos and Campbell 1998). Aspen in the RFO, either adjacent to Forest Service land or in the Henry Mountains, is intermingled with and adjacent to stands of mixed conifer stands. Conditions noted throughout Utah are not expected to be different than those in the RFO.

Fire Ecology

Fire frequencies range between 25 and 100 years with mixed severity (Loope and Gruell 1973). Aspen is characterized by Fire Regime IV and Condition Class 2. Fire regimes have been moderately altered, and vegetation structure has been moderately altered from the historical.

Pure stands of aspen are particularly susceptible to mortality of above-ground stems from fire of low intensity, even though aspen is well adapted to regeneration by sprouting after fire (Jones and DeByle 1985). Aspen stands do not easily burn and often act as natural fuel breaks during wildland fires. Fires in young aspen stands tend to be low-intensity surface fires unless there is a great deal of understory fuel. In older stands, during the warmest and/or driest months of the year, abundant fuel can lead to higher intensity fires.

Riparian/Wetland

Riparian areas occupy only a small portion of the overall landscape (less than 1 percent of the RFO), typically in narrow stringer communities along both sides of the rivers and streams and adjacent to springs. Native tree communities may be dominated by Fremont or narrowleaf cottonwoods with understories of shrubs (such as sandbar, whiplash, and Booth's willows) and herbaceous species.

Invasive species, such as tamarisk, tall whitetop, and Russian olive, along with greasewood, have become well established in the riparian communities and are slowly replacing the native vegetation across much of Utah.

Fire Ecology

Fremont cottonwood communities are characterized by a late seral stage (e.g., all mature to late-mature trees) with little or no representation of younger age-classes and are not typically fire adapted. Narrowleaf cottonwood is a somewhat fire-adapted species that may resprout from roots, provided the stands are not decadent and occur in areas where the water table remains reasonably high throughout the growing season. Willow species typically sprout vigorously following a fast-moving fire. Slow-moving fires are generally more damaging, presumably because of greater heat transfer to root crowns.

Although many riparian species may resprout following a fire, this community is not considered a fire-dependent ecosystem. Historically, fire in these riparian communities would have been infrequent, and vary from small size, with highly mosaic burn patterns as a result of the higher moisture content generally present in riparian areas/species, to stand-replacing burns likely to have occurred only in extreme drought

periods. These riparian communities are classified as Fire Regime IV, with most areas presently in Condition Classes 2 and 3. Lower elevation riparian areas would be in Condition Class 3 because of the higher incidence and potential of invasive species.

Cheatgrass

The effects of cheatgrass on fire ecology raise the importance of addressing it in this appendix. Introduced from Eurasia in the late 1800s (USDA Forest Service 2004), cheatgrass is an opportunistic winter annual that germinates anytime between autumn and spring when temperatures and soil moisture are suitable. It outcompetes native grasses that grow dormant through winter and are slower to develop in the spring. This exotic species may be present in relatively undisturbed plant communities but easily becomes dominant if a site is disturbed. Cheatgrass has been less successful in dominating sites that are above elevations of 7,000 feet, but there are known populations of cheatgrass at higher elevations.

Fire Ecology

The establishment of cheatgrass fosters much more frequent fire return intervals. Shortened natural/historical fire rotations impact perennial vegetation by killing the tops of the plants and allowing little time (e.g., few growing seasons) between recurrent fires. However, the fire regime of cheatgrass-dominated sites is the historical fire regime of that site before it was invaded by cheatgrass. For example, where cheatgrass has invaded a salt desert scrub community, the fire regime would be Fire Regime V. Wherever cheatgrass threatens to dominate the landscape, the vegetation type is managed as Condition Class 3 because of the potential for loss of key ecosystem components (e.g., native species).

The presence of cheatgrass in a wildland community extends the time during which the community is susceptible to wildland fire ignitions. In the summer, cheatgrass dries out 4 to 6 weeks earlier than perennial grasses and forms a fine-textured, highly flammable fuel. Cheatgrass may also be susceptible to fire one to two months longer in the fall because perennial grasses may green up following periods of moisture in the autumn (Paysen et. al. 2000).

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APPENDIX 7—LIVESTOCK GRAZING ALLOTMENTS

Table A7-1. Current Grazing Allotments and Forage Allocations (Alternative N)

Allotment Name	Alltmnt Number	Public Acres	Mgmt Catgry	Livestock AUMs		Wildlife AUMs		Burro	Total	Kinds of Wildlife Present	Total Active AUMs
				Active	Suspnd	Wildlife	Bison				
Angle Bench	00802	6,678	C	356	0	222	0	0	222	D,E	578
Antelope Valley	01733	15,479	M	2,349	379	537	0	0	537	D	2,886
Antimony Creek	06045	4,329	I	373	0	132	0	0	132	D,E,A	505
Antimony Ranch	06046	436	C	18	0	36	0	0	36	D,E,A	54
Apple Spring	01702	1,640	M	26	165	117	0	0	117	D,E	143
Aurora	00200	11,385	M	741	324	345	0	0	345	D,E	1,086
Axhandle	01703	2,878	M	91	274	234	0	0	234	D,E	325
Axtell	01704	1,222	C	39	49	30	0	0	30	D,E	69
Bear Valley	00201	2,416	M	150	0	217	0	0	217	D,E	367
Bicknell	00700	1,772	C	90	150	29	0	0	29	D,E	119
Bicknell Spring	00701		M	734	0	–	–	–	–	–	734
Bicknell Winter	00702		M	1,325	0	–	–	–	–	–	1,325
Blue Bench	00100	96,943	I	4,601	1,300	179	4	0	183	D,B,A	4,784
Box Creek	00803	1,411	M	109	10	108	0	0	108	D,E	217
Bullfrog	00101	83,265	I	3,183	976	375	45	0	420	D,E(e),B,S(p)	3,603
Burr Point	00102	63,646	I	2,768	1,091	193	15	0	208	D,B(i),A,S	2,976
Burrville	00202	3,300	M	48	0	108	0	0	108	D,E	156
Busenbark	00704	247	–	30	0	0	0	0	0	D	30
Canal	00219	4,051	C	357	8	34	0	0	34	D	391
Cannon/Whittaker	–	780	C	0	0	172	0	0	172	D,E	172
Cathedral	00600	105,989	I	2,616	413	222	0	0	222	D,E,A(i)	2,838
Cedar Grove	00705	7,300	C	533	118	61	0	0	61	D,E,A	594

Allotment Name	Alltmnt Number	Public Acres	Mgmt Catgry	Livestock AUMs		Wildlife AUMs		Burro	Total	Kinds of Wildlife Present	Total Active AUMs
				Active	Suspnd	Wildlife	Bison				
Cedar Peak	00706	2,355	M	125	0	37	0	0	37	D,E,A	162
Cedar Point	00103	53,102	M	1,962	802	335	6	0	341	D,B(i),A,S	2,303
Center Creek	06047	2,470	I	179	0	75	0	0	75	D,E,A	254
Chicken Coop	00203	7,088	M	213	0	280	0	0	280	D,E,A	493
Crescent Creek	00104	8,564	I	387	73	282	55	0	337	D,B	724
Cyclone	00708		–	148	0	56	0	0	56	D,E,A	204
Cyclone Co-Op	00740	5235	M	128	4	–	–	–	–	–	128
Deer Peak	00602	8,410	I	391	0	0	0	0	0	D,E	391
Deleeuw	00709	3,026	M	100	68	91	0	0	91	D,A	191
Denmark	00224	16,322	M	976	0	172	0	0	172	D	1,148
Dez Hickman	–	230	–	0	0	6	0	0	6	D	6
Donkey Hill	–	1,285	–	25	0	0	0	0	0	D	25
Dry Lake	00813	9,077	I	240	0	310	0	0	310	D,E	550
Dry Lakes	–		–	0	0	143	88	0	231	D,B	231
Dry Wash	06048	3,437	I	216	0	62	0	0	62	D,E,A	278
Durkee	00815	3,895	I	134	357	455	0	0	455	D,E	589
East Bench	00816	15,558	I	762	0	362	0	0	362	D,E,A	1,124
East Fork	00817	3,242	C	120	84	86	0	0	86	D,E	206
East Piute	00818	5,906	M	212	85	241	0	0	241	D,E	453
Elbow	00819	7,383	C	214	274	310	0	0	310	D,E	524
Fayette Cattle	01705	9,580	M	1,476	516	537	0	0	537	D,E	2,013
Fishlake	00220	22,263	M	737	0	326	0	0	326	D,E,A	1,063
Flat Canyon	01706	2,983	C	49	301	26	0	0	26	D	75
Flat Top	00712	18,145	M	717	0	255	0	0	255	D,A	972
Flint Trail	–	32,550	–	0	0	974	0	0	974	D,S	974

Allotment Name	Alltmnt Number	Public Acres	Mgmt Catgry	Livestock AUMs		Wildlife AUMs		Burro	Total	Kinds of Wildlife Present	Total Active AUMs
				Active	Suspnd	Wildlife	Bison				
Government Creek	00713	1,832	C	91	0	31	0	0	31	D	122
Greenwich Creek	00821	580	M	33	31	52	0	0	52	D,E	85
Grover	00714	1,488	C	80	0	58	0	0	58	D,E	138
Gunnison Valley	01734	15,949	I	1,263	1,031	768	0	0	768	D,E	2,031
Gypsum	00205	19,729	M	1,029	60	657	0	0	657	D,E,A	1,686
Hanksville	00107	82,658	I	5,334	1,680	369	18	0	387	D,B(i),A	5,721
Hare Lake	00715	6,352	M	355	0	63	0	0	63	D,E,A	418
Hartnet	00603	22,990	I	1,802	512	128	0	0	128	D,E,S(p)	1,930
Hatch Canyon	00822	1,140	C	46	0	83	0	0	83	D,E	129
Hayes Canyon	01708	7,013	M	300	251	190	0	0	190	D,E	490
Hector Hollow	00716	1,955	M	138	0	61	0	0	61	D,E	199
Hodge Range	00823	13,584	C	484	0	276	0	0	276	D,E	760
Hop Creek	01709	521	C	94	146	51	0	0	51	D,E	145
Horse Pasture	00717	467	C	14	26	8	0	0	8	D,E	22
Horse Ridge	01710	2,220	C	57	59	84	0	0	84	D,E	141
Horseshoe Canyon South	15100	35,247	–	0	0	2,025	0	0	2,025	D,A,S	2,025
Hunt	00206	910	C	52	0	21	0	0	21	D,E	73
Hunter Spring	00824	2,873	M	129	0	216	0	0	216	D,E	345
Indian Hollow	01711	1,040	C	154	0	92	0	0	92	D,E	246
Jefferey Well	35033	81,535	I	2,802	0	0	0	0	0	D,A	2,802
Joe Hickman	00718	269	C	4	0	8	0	0	8	D,E	12
Johns Valley	06050	5,392	C	255	0	106	0	0	106	D,E,A	361
Jones	00207	330	C	12	0	14	0	0	14	D,E	26
Junction	00826	9,129	M	331	0	414	0	0	414	D,E	745
King Sheep	00719	7,302	M	161	0	114	0	0	114	D,A	275

Allotment Name	Alltmnt Number	Public Acres	Mgmt Catgry	Livestock AUMs		Wildlife AUMs		Burro	Total	Kinds of Wildlife Present	Total Active AUMs
				Active	Suspnd	Wildlife	Bison				
Kinston Canyon	00827	2,323	C	84	0	104	0	0	104	D,E	188
Koosharem Creek	00221	1,918	C	46	0	222	0	0	222	D,E	268
Last Chance	00605	18,800	I	1,036	0	0	0	0	0	D,E,A	1,036
Lime Kiln	00720	2,927	M	354	0	58	0	0	58	D,E	412
Little Valley	01712	7,094	M	798	1,589	184	0	0	184	D,E	982
Loa Winter	00721		M	180	72	–	–	–	–	–	180
Lone Cedar	01713	13,282	I	1,050	260	363	0	0	363	D,E	1,413
Long Hollow	00722	8,823	M	209	82	198	0	0	198	D,A	407
Lost Creek	00209	2,164	M	46	0	146	0	0	146	D,E,A	192
Lyman	00723	2,020	C	125	48	32	0	0	32	D,E	157
M & O	00607	15,570	I	1,217	0	0	0	0	0	D,E	1,217
Manning Creek	00829	7,241	C	128	0	384	0	0	384	D,E	512
Maple Canyon	01715	2,246	M	135	0	74	0	0	74	D,E	209
Marysvale	00846	2,704	M	97	123	325	0	0	325	D,E	422
Middle Hollow	01717	764	M	82	0	43	0	0	43	D,E	125
Miners Mountain	00724	14,896	M	212	307	159	0	0	159	D,E	371
Monroe Co-Op	00222	24,202	I	1,038	0	460	0	0	460	D,E	1,498
Mussentuchit	00608	52,360	I	1,998	0	0	0	0	0	D,E,A	1,998
Nasty Flat	00108	14,253	I	482	0	210	576	0	786	D,E(e),B	1,268
Neff Ranch	00725	1,602	C	82	122	91	0	0	91	D,E	173
North Cove Mountain	00211	8,469	M	268	0	488	0	0	488	D,E	756
North Freemont	00726	4,036	C	230	71	101	0	0	101	D,E	331
North Hollow	01718	1,318	M	92	0	101	0	0	101	D,E	193
North Narrows	00832	13,713	I	702	196	255	0	0	255	D,E,A	957
Oak Springs	00833	6,375	C	296	0	244	0	0	244	D,E	540

Allotment Name	Alltmnt Number	Public Acres	Mgmt Catgry	Livestock AUMs		Wildlife AUMs		Burro	Total	Kinds of Wildlife Present	Total Active AUMs
				Active	Suspnd	Wildlife	Bison				
Ogden	00834	6,538	I	286	39	113	0	0	113	D,E	399
P-Hill	–	2,200	C	0	0	296	0	0	296	D,E	296
Parson Mills	00212	881	C	21	0	14	0	0	14	D,E	35
Pasture Canyon	15063	41,600	I	208	0	0	0	0	0	A	208
Pearson-Lewis	00835	1,973	C	114	0	138	0	0	138	D,E	252
Pennell	00109	56,272	I	2,274	0	824	1,155	0	1,979	D,E(e),B	4,253
Pine Creek	06051	11,260	I	791	0	399	0	0	399	D,E,A	1,190
Piute Dam	00838	2,364	C	56	18	34	0	0	34	D,E	90
Plateau	00213	4,321	M	340	0	163	0	0	163	D,E	503
Poison Creek	06052	4,126	M	281	0	212	0	0	212	D,E,A	493
Pole Canyon	06053	6,497	M	380	0	115	0	0	115	D,E	495
Post Hollow	00727	9,561	M	325	5	86	0	0	86	D,E,A	411
Red Canyon	01719	8,110	I	711	893	222	0	0	222	D,E	933
Ricks Pasture	00841	721	C	11	0	9	0	0	9	D	20
River	00729	2,029	C	75	51	14	0	0	14	D	89
River	01720	488	C	34	22	18	0	0	18	D	52
Robbers Roost	00901	159,786	I	3,847	0	3,026	0	100	3,126	D,A,S	6,973
Rock Canyon	01721	8,794	I	5,009	420	212	0	0	212	D,E	5,221
Rock Springs	00611	86,766	I	4,229	0	0	0	0	0	D,E,A	4,229
Rockies	00110	116,030	M	5,872	1,434	1,083	0	0	1,083	D,A,S	6,955
Rocky Ford	00842	11,447	M	386	0	388	0	0	388	D,E	774
Rough Canyon	01722	5,123	C	328	263	199	0	0	199	D	527
Salls Meadow	00215	6,100	M	101	68	321	0	0	321	D,E	422
Sand Ledge	00216	1,716	M	31	0	291	0	0	291	D,E	322
Sand Wash	00730	676	C	33	21	18	0	0	18	D	51

Allotment Name	Alltmnt Number	Public Acres	Mgmt Catgry	Livestock AUMs		Wildlife AUMs		Burro	Total	Kinds of Wildlife Present	Total Active AUMs
				Active	Suspnd	Wildlife	Bison				
Sandy #1	00111	24,670	I	1,088	28	92	0	0	92	D,A(i)	1,180
Sandy #2	00112	45,304	I	2,228	0	62	155	0	217	D,B,A(i)	2,445
Sandy #3	00113	4,491	C	282	185	21	0	0	21	D,B(i),A(i)	303
Sanpitch	01723	360	C	48	37	21	0	0	21	D,E	69
Sawmill Basin	–	9,328	–	166	0	181	44	0	225	D,B	391
Seven Mile	00731	17,333	I	723	112	165	0	0	165	D,E,A	888
Sevier River	06049	50	C	80	0	10	0	0	10	D,E	90
Sewing Machine	00902	55,549	I	1,599	0	1,064	0	0	1,064	D,S	2,663
Slickrock/Little Rockies	00105	33,685	–	0	0	660	0	0	660	D,S	660
Smooth Knoll	00732	17,852	M	1,053	0	133	0	0	133	D,E,A	1,186
South Hollow	01724	2,096	I	200	92	201	0	0	201	D,E	401
South Narrows	00843	12,755	I	670	389	281	0	0	281	D,E,A	951
South Valley	01725	17,637	M	849	0	227	0	0	227	D,E	1,076
Spring Branch	00733	452	C	11	0	35	0	0	35	D,E	46
Steele Butte	00115	73,931	I	4,554	0	488	682	0	1,170	D,B,A(i)	5,724
Swedes Canyon	01726	2,823	M	428	0	77	0	0	77	D	505
Sweetwater	25086	70,120	I	3,922	1,289	0	0	0	0	D,A	3,922
Teasdale Bench	00736	1,118	C	98	55	9	0	0	9	D	107
Teasdale Ranch	00737	921	C	58	0	10	0	0	10	D	68
Ten Mile	00845	3,919	M	149	181	207	0	0	207	D,E	356
Terza Flat	00738	7,417	M	291	87	162	0	0	162	D,A	453
Timber Canyon	01727	13,317	M	654	0	750	0	0	750	D,E	1,404
Torrey Town	00739	9,199	C	388	108	10	0	0	10	D	398
Trachyte	00116	51,488	M	3,014	818	391	14	0	405	D,E(e),B(i),A(p),S	3,419
Twelvemile	01728	160	C	11	88	7	0	0	7	D,E	18

Allotment Name	Alltmnt Number	Public Acres	Mgmt Catgry	Livestock AUMs		Wildlife AUMs		Burro	Total	Kinds of Wildlife Present	Total Active AUMs
				Active	Suspnd	Wildlife	Bison				
Twist	00223	5,307	M	209	158	52	0	0	52	D,E	261
Uinta	01729	566	C	130	0	20	0	0	20	D,E	150
Under the Rim	01730	1,059	C	72	214	29	0	0	29	D	101
Washburn	–	595	C	0	0	21	0	0	21	D,E	21
Waterpocket	00117	37,902	M	3,007	407	206	0	0	206	D,S(p)	3,213
West Freemont	00742	1,429	C	83	82	43	0	0	43	D,E	126
West Side	01731	3,506	M	405	434	84	0	0	84	D	489
Wild Horse	00613	80,136	C	1,522	573	128	0	0	128	D,S(p)	1,650
Wildlife	–	320	–	0	0	4	0	0	4	D,E	4
Willow Spring	00612	7,350	I	304	0	0	0	0	0	D,E	304
Wood Hollow	01732	3,715	C	100	113	102	0	0	102	D,E	202
Totals				**110,194**	**23,171**	**33,051**	**2,857**	**100**	**36,008**		**146,202**

Wildlife Key: D= Deer; E= Elk; B= Bison; A= Antelope; S= Bighorn Sheep; (i)= Infrequent or occur on only a small part within the allotment; (e)= Species occurs within the allotment but is targeted for elimination by the Utah Division of Wildlife Resources (UDWR); (p)= Potential for species within the allotment

Table A7-2. Alternative A Forage Allocations

Allotment Name	Alltmnt Number	Public Acres	Mgmt Catgry	Livestock AUMs		Wildlife AUMs		Burro	Total	Kinds of Wildlife Present	Total Active AUMs
				Active	Suspnd	Wildlife	Bison				
Angle Bench	00802	6678	C	356	0	222	0	0	222	D,E	578
Antelope Valley	01733	15479	M	2,349	379	537	0	0	537	D	2,886
Antimony Creek	06045	43293	I	373	0	132	0	0	132	D,E,A	505
Antimony Ranch	06046	436	C	18	0	36	0	0	36	D,E,A	54
Apple Spring	01702	1640	M	26	165	117	0	0	117	D,E	143
Aurora	00200	11,385	M	741	324	345	0	0	345	D,E	1,086
Axhandle	01703	2,878	M	91	274	234	0	0	234	D,E	325
Axtell	01704	1,222	C	39	49	30	0	0	30	D,E	69
Bear Valley	00201	2,416	M	150	0	217	0	0	217	D,E	367
Bicknell	00700	1,772	C	90	150	29	0	0	29	D,E	119
Bicknell Spring	00701	26,559	M	2,267	0	233	0	0	233	D,E,A	2,500
Bicknell Winter	00702	25,447	M	2,203	0	369	0	0	369	D,E,A	2,572
Blue Bench	00100	96,943	I	4,601	1,300	179	4	0	183	D,B,A	4,784
Box Creek	00803	1,411	M	109	10	108	0	0	108	D,E	217
Bullfrog	00101	83,265	I	3,183	976	375	45	0	420	D,E(e),B,S(p)	3,603
Burr Point	00102	63,646	I	2,768	1,091	193	15	0	208	D,B(i),A,S	2,976
Burrville	00202	3,300	M	48	0	108	0	0	108	D,E	156
Busenbark	00704	247	–	30	0	0	0	0	0	D	30
Canal	00219	4,051	C	357	8	34	0	0	34	D	391
Cannon/Whittaker	–	780	C	20	0	152	0	0	152	D,E	172
Cathedral	00600	105,989	I	2,616	413	222	0	0	222	D,E,A(i)	2,838
Cedar Grove	00705	7,300	C	533	118	61	0	0	61	D,E,A	594
Cedar Point	00103	53,102	M	1,962	802	335	6	0	341	D,B(i),A,S	2,303
Center Creek	06047	2,470	I	179	0	75	0	0	75	D,E,A	254

Allotment Name	Alltmnt Number	Public Acres	Mgmt Catgry	Livestock AUMs		Wildlife AUMs		Burro	Total	Kinds of Wildlife Present	Total Active AUMs
				Active	Suspnd	Wildlife	Bison				
Chicken Coop	00203	7,088	M	213	0	280	0	0	280	D,E,A	493
Crescent Creek	00104	8,564	I	387	73	282	55	0	337	D,B	724
Cyclone Co-Op	00740	5235	M	276	4	56	0	0	56	D,E,A	332
Deer Peak	00602	8,410	I	391	0	0	0	0	0	D,E	391
Denmark	00224	16,322	M	976	0	172	0	0	172	D	1,148
Dez Hickman	–	230	–	6	0	0	0	0	0	D	6
Donkey Hill	–	1,285	–	25	0	0	0	0	0	D	25
Dry Lake	00813	9,077	I	240	0	310	0	0	310	D,E	550
Dry Lakes	–	7,520	–	83	0	143	88	0	231	D,B	314
Dry Wash	06048	3,437	I	216	0	62	0	0	62	D,E,A	278
Durkee	00815	3,895	I	134	357	455	0	0	455	D,E	589
East Bench	00816	15,558	I	762	0	362	0	0	362	D,E,A	1,124
East Fork	00817	3,242	C	120	84	86	0	0	86	D,E	206
East Piute	00818	5,906	M	212	85	241	0	0	241	D,E	453
Elbow	00819	7,383	C	214	274	310	0	0	310	D,E	524
Fayette Cattle	01705	9,580	M	1,476	516	537	0	0	537	D,E	2,013
Fishlake	00220	22,263	M	737	0	326	0	0	326	D,E,A	1,063
Flat Canyon	01706	2,983	C	49	301	26	0	0	26	D	75
Flint Trail	–	32,550	–	0	0	974	0	0	974	D,S	974
Government Creek	00713	1,832	C	91	0	31	0	0	31	D	122
Greenwich Creek	00821	580	M	33	31	52	0	0	52	D,E	85
Grover	00714	1,488	C	80	0	58	0	0	58	D,E	138
Gunnison Valley	01734	15,949	I	1,263	1,031	768	0	0	768	D,E	2,031
Gypsum	00205	19,729	M	1,029	60	657	0	0	657	D,E,A	1,686
Hanksville	00107	82,658	I	5,334	1,680	369	18	0	387	D,B(i),A	5,721

Allotment Name	Alltmnt Number	Public Acres	Mgmt Catgry	Livestock AUMs		Wildlife AUMs		Burro	Total	Kinds of Wildlife Present	Total Active AUMs
				Active	Suspnd	Wildlife	Bison				
Hartnet	00603	22,990	I	1,802	512	128	0	0	128	D,E,S(p)	1,930
Hatch Canyon	00822	1,140	C	46	0	83	0	0	83	D,E	129
Hayes Canyon	01708	7,013	M	300	251	190	0	0	190	D,E	490
Hector Hollow	00716	1,955	M	138	0	61	0	0	61	D,E	199
Hodge Range	00823	13,584	C	484	0	276	0	0	276	D,E	760
Hop Creek	01709	521	C	94	146	51	0	0	51	D,E	145
Horse Pasture	00717	467	C	14	26	8	0	0	8	D,E	22
Horse Ridge	01710	2,220	C	57	59	84	0	0	84	D,E	141
Horseshoe Canyon South	15100	35,247	–	0	0	2,025	0	0	2,025	D,A,S	2,025
Hunt	00206	910	C	52	0	21	0	0	21	D,E	73
Hunter Spring	00824	2,873	M	129	0	216	0	0	216	D,E	345
Indian Hollow	01711	1,040	C	154	0	92	0	0	92	D,E	246
Jefferey Well	35033	81,535	I	2,802	0	0	0	0	0	D,A	2,802
Joe Hickman	00718	269	C	4	0	8	0	0	8	D,E	12
Johns Valley	06050	5,392	C	255	0	106	0	0	106	D,E,A	361
Jones	00207	330	C	26	0	0	0	0	0	D,E	26
Junction	00826	9,129	M	331	0	414	0	0	414	D,E	745
Kinston Canyon	00827	2,323	C	84	0	104	0	0	104	D,E	188
Koosharem Creek	00221	1,918	C	46	0	222	0	0	222	D,E	268
Last Chance	00605	18,800	I	1,036	0	0	0	0	0	D,E,A	1,036
Lime Kiln	00720	2,927	M	354	0	58	0	0	58	D,E	412
Little Valley	01712	7,094	M	798	1,589	184	0	0	184	D,E	982
Loa Winter	00721	19,266	M	780	309	451	0	0	451	D,E,A	1,231
Lone Cedar	01713	13,282	I	1,050	260	363	0	0	363	D,E	1,413
Lost Creek	00209	2,164	M	46	0	146	0	0	146	D,E,A	192

Allotment Name	Alltmnt Number	Public Acres	Mgmt Catgry	Livestock AUMs		Wildlife AUMs		Burro	Total	Kinds of Wildlife Present	Total Active AUMs
				Active	Suspnd	Wildlife	Bison				
Lyman	00723	2,020	C	125	48	32	0	0	32	D,E	157
M & O	00607	15,570	I	1,217	0	0	0	0	0	D,E	1,217
Manning Creek	00829	7,241	C	128	0	384	0	0	384	D,E	512
Maple Canyon	01715	2,246	M	135	0	74	0	0	74	D,E	209
Marysvale	00846	2,704	M	97	123	325	0	0	325	D,E	422
Middle Hollow	01717	764	M	82	0	43	0	0	43	D,E	125
Miners Mountain	00724	14,896	M	212	307	159	0	0	159	D,E	371
Monroe Co-Op	00222	24,202	I	1,038	0	460	0	0	460	D,E	1,498
Mussentuchit	00608	52,360	I	1,998	0	0	0	0	0	D,E,A	1,998
Nasty Flat	00108	14,253	I	482	0	210	576	0	786	D,E(e),B	1,268
Neff Ranch	00725	1,602	C	82	122	91	0	0	91	D,E	173
North Cove Mountain	00211	8,469	M	268	0	488	0	0	488	D,E	756
North Freemont	00726	4,036	C	230	71	101	0	0	101	D,E	331
North Hollow	01718	1,318	M	92	0	101	0	0	101	D,E	193
North Narrows	00832	13,713	I	702	196	255	0	0	255	D,E,A	957
Oak Springs	00833	6,375	C	296	0	244	0	0	244	D,E	540
Ogden	00834	6,538	I	286	39	113	0	0	113	D,E	399
P-Hill	–	2,200	C	96	0	200	0	0	200	D,E	296
Parson Mills	00212	881	C	35	0	0	0	0	0	D,E	35
Pasture Canyon	15063	41,600	I	208	0	0	0	0	0	A	208
Pearson-Lewis	00835	1,973	C	114	0	138	0	0	138	D,E	252
Pennell	00109	56,272	I	2,274	0	824	1,155	0	1,979	D,E(e),B	4,253
Pine Creek	06051	11,260	I	791	0	399	0	0	399	D,E,A	1,190
Piute Dam	00838	2,364	C	56	18	34	0	0	34	D,E	90
Plateau	00213	4,321	M	340	0	163	0	0	163	D,E	503

Allotment Name	Alltmnt Number	Public Acres	Mgmt Catgry	Livestock AUMs		Wildlife AUMs		Burro	Total	Kinds of Wildlife Present	Total Active AUMs
				Active	Suspnd	Wildlife	Bison				
Poison Creek	06052	4,126	M	281	0	212	0	0	212	D,E,A	493
Pole Canyon	06053	6,497	M	380	0	115	0	0	115	D,E	495
Post Hollow	00727	9,561	M	325	5	86	0	0	86	D,E,A	411
Red Canyon	01719	8,110	I	711	893	222	0	0	222	D,E	933
Ricks Pasture	00841	721	C	20	0	0	0	0	0	D	20
River	00729	2,029	C	75	51	14	0	0	14	D	89
River (Sanpete)	01720	488	C	34	22	18	0	0	18	D	52
Robbers Roost	00901	159,786	I	3,847	0	3,026	0	100	3,126	D,A,S	6,973
Rock Canyon	01721	8,794	I	5,009	420	212	0	0	212	D,E	5,221
Rock Springs	00611	86,766	I	4,229	0	0	0	0	0	D,E,A	4,229
Rockies	00110	116,030	M	5,872	1,434	1,083	0	0	1,083	D,A,S	6,955
Rocky Ford	00842	11,447	M	386	0	388	0	0	388	D,E	774
Rough Canyon	01722	5,123	C	328	263	199	0	0	199	D	527
Salls Meadow	00215	6,100	M	101	68	321	0	0	321	D,E	422
Sand Ledge	00216	1,716	M	31	0	291	0	0	291	D,E	322
Sand Wash	00730	676	C	33	21	18	0	0	18	D	51
Sandy #1	00111	24,670	I	1,088	28	92	0	0	92	D,A(i)	1,180
Sandy #2	00112	45,304	I	2,228	0	62	155	0	217	D,B,A(i)	2,445
Sandy #3	00113	4,491	C	282	185	21	0	0	21	D,B(i),A(i)	303
Sanpitch	01723	360	C	48	37	21	0	0	21	D,E	69
Sawmill Basin	–	9,328	–	166	0	181	44	0	225	D,B	391
Seven Mile	00731	17,333	I	723	112	165	0	0	165	D,E,A	888
Sevier River	06049	50	C	80	0	10	0	0	10	D,E	90
Sewing Machine	00902	55,549	I	1,599	0	1,064	0	0	1,064	D,S	2,663
Slickrock/Little Rockies	00105	33,685	–	0	0	660	0	0	660	D,S	660

Allotment Name	Alltmnt Number	Public Acres	Mgmt Catgry	Livestock AUMs		Wildlife AUMs		Burro	Total	Kinds of Wildlife Present	Total Active AUMs
				Active	Suspnd	Wildlife	Bison				
South Hollow	01724	2,096	I	200	92	201	0	0	201	D,E	401
South Narrows	00843	12,755	I	670	389	281	0	0	281	D,E,A	951
South Valley	01725	17,637	M	849	0	227	0	0	227	D,E	1,076
Spring Branch	00733	452	C	11	0	35	0	0	35	D,E	46
Steele Butte	00115	73,931	I	4,554	0	488	682	0	1,170	D,B,A(i)	5,724
Swedes Canyon	01726	2,823	M	428	0	77	0	0	77	D	505
Sweetwater	25086	70,120	I	3,922	1,289	0	0	0	0	D,A	3,922
Teasdale Bench	00736	1,118	C	98	55	9	0	0	9	D	107
Teasdale Ranch	00737	921	C	58	0	10	0	0	10	D	68
Ten Mile	00845	3,919	M	149	181	207	0	0	207	D,E	356
Timber Canyon	01727	13,317	M	654	0	750	0	0	750	D,E	1,404
Torrey Town	00739	9,199	C	388	108	10	0	0	10	D	398
Trachyte	00116	51,488	M	3,014	818	391	14	0	405	D,E(e),B(i),A(p),S	3,419
Twelvemile	01728	160	C	11	88	7	0	0	7	D,E	18
Twist	00223	5,307	M	209	158	52	0	0	52	D,E	261
Uinta	01729	566	C	130	0	20	0	0	20	D,E	150
Under the Rim	01730	1,059	C	72	214	29	0	0	29	D	101
Washburn	–	595	C	21	0	0	0	0	0	D,E	21
Waterpocket	00117	37,902	M	3,007	407	206	0	0	206	D,S(p)	3,213
West Freemont	00742	1,429	C	83	82	43	0	0	43	D,E	126
West Side	01731	3,506	M	405	434	84	0	0	84	D	489
Wild Horse	00613	80,136	C	1,522	573	128	0	0	128	D,S(p)	1,650
Wildlife	–	320	–	4	0	0	0	0	0	D,E	4
Willow Spring	00612	7,350	I	304	0	0	0	0	0	D,E	304
Wood Hollow	01732	3,715	C	100	113	102	0	0	102	D,E	202

Allotment Name	Alltmnt Number	Public Acres	Mgmt Catgry	Livestock AUMs		Wildlife AUMs		Burro	Total	Kinds of Wildlife Present	Total Active AUMs
				Active	Suspnd	Wildlife	Bison				
TOTALS				**110,461**	**23,171**	**32,867**	**2,857**	**100**	**35,824**		**146,285**

Wildlife Key: D= Deer; E= Elk; B= Bison; A= Antelope; S= Bighorn Sheep; (i)= Infrequent or occur on only a small part within the allotment; (e)= Species occurs within the allotment but is targeted for elimination by UDWR; (p)= Potential for species within the allotment

Table A7-3. Proposed RMP and Alternatives C and D Forage Allocations

Allotment Name	Alltmnt Number	Public Acres	Mgt Cat	Livestock AUMs		Wildlife AUMs				Mgmt AUMs		No Dom. Sheep	Kinds of Wildlife Present	Total Active AUMs Allotted
				Active	Suspnd	Wildlife	Bison	Burro	Total	Active	Suspnd			
Angle Bench	00802	6,678	C	356	0	222	0	0	222				D,E	578
Antelope Valley	01733	15,479	M	2,349	379	537	0	0	537				D	2,886
Antimony Creek	06045	4,329	I	373	0	132	0	0	132				D,E,A	505
Antimony Ranch	06046	436	C	18	0	36	0	0	36				D,E,A	54
Apple Spring	01702	1,640	M	26	165	117	0	0	117				D,E	143
Aurora	00200	11,385	M	741	324	345	0	0	345				D,E	1,086
Axhandle	01703	2,878	M	91	274	234	0	0	234				D,E	325
Axtell	01704	1,222	C	39	49	30	0	0	30				D,E	69
Bear Valley	00201	2,416	M	150	0	217	0	0	217				D,E	367
Bicknell	00700	1,772	C	90	150	29	0	0	29				D,E	119
Bicknell Spring	00701	26,559	M	2,267	0	233	0	0	233				D,E,A	2,500
Bicknell Winter	00702	25,447	M	2,203	0	369	0	0	369				D,E,A	2,572
Blue Bench	00100	96,943	I	4,601	1,300	179	4	0	183			X	D,B,A	4,784
Box Creek	00803	1,411	M	109	10	108	0	0	108				D,E	217
Bullfrog	00101	83,265	I	2,861	976	697	45	0	742			X	D,E(e), B,S(p)	3,603
Burr Point	00102	63,646	I	2,768	1,091	193	15	0	208			X	D,B(i),A, S	2,976
Burrville	00202	3,300	M	48	0	108	0	0	108				D,E	156
Busenbark	00704	247	–	0	0	0	0	0	0	30	0		D	30
Canal	00219	4,051	C	357	8	34	0	0	34				D	391
Cannon/ Whittaker	–	780	–	0	0	172	0	0	172				D,E	172
Cathedral	00600	105,989	I	2,616	413	222	0	0	222			X	D,E,A(i)	2,838

Allotment Name	Alltmnt Number	Public Acres	Mgt Cat	Livestock AUMs		Wildlife AUMs				Mgmt AUMs		No Dom. Sheep	Kinds of Wildlife Present	Total Active AUMs Allotted
				Active	Suspnd	Wildlife	Bison	Burro	Total	Active	Suspnd			
Cedar Grove	00705	7,300	C	533	118	61	0	0	61				D,E,A	594
Cedar Point	00103	53,102	M	1,962	802	335	6	0	341			X	D,B(i),A, S	2,303
Center Creek	06047	2,470	I	179	0	75	0	0	75				D,E,A	254
Chicken Coop	00203	7,088	M	213	0	280	0	0	280				D,E,A	493
Crescent Creek	00104	8,564	I	387	73	282	55	0	337			X	D,B	724
Cyclone Co-Op	00740	5235	M	276	4	56	0	0	56				D,E,A	332
Deer Peak	00602	8,410	I	391	0	0	0	0	0			X	D,E	391
Denmark	00224	16,322	M	976	0	172	0	0	172				D	1,148
Dez Hickman	–	230	–	0	0	6	0	0	6				D	6
Donkey Hill	–	1,285	–	0	0	0	0	0	0	25			D	25
Dry Lake	00813	7,520	I	240	0	310	0	0	310				D,E	550
Dry Lakes	–	9,077	–	0	0	143	88	0	231			X	D,B	231
Dry Wash	06048	3,437	I	216	0	62	0	0	62				D,E,A	278
Durkee	00815	3,895	I	134	357	455	0	0	455				D,E	589
East Bench	00816	15,558	I	762	0	362	0	0	362				D,E,A	1,124
East Fork	00817	3,242	C	120	84	86	0	0	86				D,E	206
East Piute	00818	5,906	M	212	85	241	0	0	241				D,E	453
Elbow	00819	7,383	C	214	274	310	0	0	310				D,E	524
Fayette Cattle	01705	9,580	M	1,476	516	537	0	0	537				D,E	2,013
Fishlake	00220	22,263	M	737	0	326	0	0	326				D,E,A	1,063
Flat Canyon	01706	2,983	C	49	301	26	0	0	26				D	75
Flint Trail	–	32,550	–	0	0	974	0	0	974			X	D,S	974
Government Creek	00713	1,832	C	91	0	31	0	0	31				D	122

Allotment Name	Alltmnt Number	Public Acres	Mgt Cat	Livestock AUMs		Wildlife AUMs				Mgmt AUMs		No Dom. Sheep	Kinds of Wildlife Present	Total Active AUMs Allotted
				Active	Suspnd	Wildlife	Bison	Burro	Total	Active	Suspnd			
Greenwich Creek	00821	580	M	33	31	52	0	0	52				D,E	85
Grover	00714	1,488	C	80	0	58	0	0	58				D,E	138
Gunnison Valley	01734	15,949	I	1,263	1,031	768	0	0	768				D,E	2,031
Gypsum	00205	19,729	M	1,029	60	657	0	0	657				D,E,A	1,686
Hanksville	00107	82,658	I	5,334	1,680	369	18	0	387			X	D,B(i),A	5,721
Hartnet	00603	22,990	I	1,802	512	128	0	0	128			X	D,E,S(p)	1,930
Hatch Canyon	00822	1,140	C	46	0	83	0	0	83				D,E	129
Hayes Canyon	01708	7,013	M	300	251	190	0	0	190				D,E	490
Hector Hollow	00716	1,955	M	138	0	61	0	0	61				D,E	199
Hodge Ranch	00823	13,584	C	484	0	276	0	0	276				D,E	760
Hop Creek	01709	521	C	94	146	51	0	0	51				D,E	145
Horse Pasture	00717	467	C	14	26	8	0	0	8				D,E	22
Horse Ridge	01710	2,220	C	57	59	84	0	0	84				D,E	141
Horseshoe Canyon South	15100	35,247	–	0	0	2,025	0	0	2,025			X	D,A,S	2,025
Hunt	00206	910	C	52	0	21	0	0	21				D,E	73
Hunter Spring	00824	2,873	M	129	0	216	0	0	216				D,E	345
Indian Hollow	01711	1,040	C	154	0	92	0	0	92				D,E	246
Jefferey Well	35033	81,535	I	2,802	0	0	0	0	0				D,A	2,802
Joe Hickman	00718	269	C	4	0	8	0	0	8				D,E	12
Johns Valley	06050	5,392	C	255	0	106	0	0	106				D,E,A	361
Jones	00207	330	–	0	0	14	0	0	14	12			D,E	26
Junction	00826	9,129	M	331	0	414	0	0	414				D,E	745
Kinston Canyon	00827	2,323	C	84	0	104	0	0	104				D,E	188

Allotment Name	Alltmnt Number	Public Acres	Mgt Cat	Livestock AUMs		Wildlife AUMs				Mgmt AUMs		No Dom. Sheep	Kinds of Wildlife Present	Total Active AUMs Allotted
				Active	Suspnd	Wildlife	Bison	Burro	Total	Active	Suspnd			
Koosharem Creek	00221	1,918	C	46	0	222	0	0	222				D,E	268
Last Chance	00605	18,800	I	1,036	0	0	0	0	0			X	D,E,A	1,036
Lime Kiln	00720	2,927	M	354	0	58	0	0	58				D,E	412
Little Valley	01712	7,094	M	798	1,589	184	0	0	184				D,E	982
Loa Winter	00721	19,266	M	780	309	451	0	0	451				D,E,A	1,231
Lone Cedar	01713	13,282	I	1,050	260	363	0	0	363				D,E	1,413
Lost Creek	00209	2,164	M	46	0	146	0	0	146				D,E,A	192
Lyman	00723	2,020	C	125	48	32	0	0	32				D,E	157
M&O	00607	15,570	I	1,217	0	0	0	0	0			X	D,E	1,217
Manning Creek	00829	7,241	–	0	0	384	0	0	384	128			D,E	512
Maple Canyon	01715	2,246	M	135	0	74	0	0	74				D,E	209
Marysvale	00846	2,704	M	97	123	325	0	0	325				D,E	422
Middle Hollow	01717	764	M	82	0	43	0	0	43				D,E	125
Miners Mountain	00724	14,896	M	212	307	159	0	0	159			X	D,E	371
Monroe Co-Op	00222	24,202	I	1,038	0	460	0	0	460				D,E	1,498
Mussentuchit	00608	52,360	I	1,998	0	0	0	0	0			X	D,E,A	1,998
Nasty Flat	00108	14,253	I	482	0	210	576	0	786			X	D,E(e),B	1,268
Neff Ranch	00725	1,602	C	82	122	91	0	0	91				D,E	173
North Cove Mountain	00211	8,469	M	268	0	488	0	0	488				D,E	756
North Freemont	00726	4,036	C	230	71	101	0	0	101				D,E	331
North Hollow	01718	1,318	M	92	0	101	0	0	101				D,E	193
North Narrows	00832	13,713	I	702	196	255	0	0	255				D,E,A	957
Oak Springs	00833	6,375	C	296	0	244	0	0	244				D,E	540

Allotment Name	Alltmnt Number	Public Acres	Mgt Cat	Livestock AUMs		Wildlife AUMs				Mgmt AUMs		No Dom. Sheep	Kinds of Wildlife Present	Total Active AUMs Allotted
				Active	Suspnd	Wildlife	Bison	Burro	Total	Active	Suspnd			
Ogden	00834	6,538	I	286	39	113	0	0	113				D,E	399
P-Hill	–	2,200	–	0	0	296	0	0	296				D,E	296
Parson Mills	00212	881	–	0	0	14	0	0	14	21			D,E	35
Pasture Canyon	15063	41,600	I	208	0	0	0	0	0				A	208
Pearson-Lewis	00835	1,973	C	114	0	138	0	0	138				D,E	252
Pennell	00109	56,272	I	1,769	0	824	1,660	0	2,484			X	D,E(e),B	4,253
Pine Creek	06051	11,260	I	791	0	399	0	0	399				D,E,A	1,190
Piute Dam	00838	2,364	C	56	18	34	0	0	34				D,E	90
Plateau	00213	4,321	M	340	0	163	0	0	163				D,E	503
Poison Creek	06052	4,126	M	281	0	212	0	0	212				D,E,A	493
Pole Canyon	06053	6,497	M	380	0	115	0	0	115				D,E	495
Post Hollow	00727	9,561	M	325	5	86	0	0	86				D,E,A	411
Red Canyon	01719	8,110	I	711	893	222	0	0	222				D,E	933
Ricks Pasture	00841	721	C	0	0	9	0	0	9	11			D	20
River	00729	2,029	C	75	51	14	0	0	14				D	89
River	01720	488	C	34	22	18	0	0	18			X	D	52
Robbers Roost1	00901	159,786	I	3,847	0	1,9261	0	600[1]	3,126	600		X	D,A,S	6,973
Rock Canyon	01721	8,794	I	5,009	420	212	0	0	212				D,E	5,221
Rock Springs	00611	86,766	I	4,229	0	0	0	0	0			X	D,E,A	4,229
Rockies	00110	116,030	M	5,600	1,434	1,355	0	0	1,355			X	D,A,S	6,955
Rocky Ford	00842	11,447	M	386	0	388	0	0	388				D,E	774
Rough Canyon	01722	5,123	C	328	263	199	0	0	199				D	527
Salls Meadow	00215	6,100	M	101	68	321	0	0	321				D,E	422
Sand Ledge	00216	1,716	M	31	0	291	0	0	291				D,E	322
Sand Wash	00730	676	C	33	21	18	0	0	18				D	51

Allotment Name	Alltmnt Number	Public Acres	Mgt Cat	Livestock AUMs		Wildlife AUMs				Mgmt AUMs		No Dom. Sheep	Kinds of Wildlife Present	Total Active AUMs Allotted
				Active	Suspnd	Wildlife	Bison	Burro	Total	Active	Suspnd			
Sandy #1	00111	24,670	I	1,088	28	92	0	0	92			X	D,A(i)	1,180
Sandy #2	00112	45,304	I	2,228	0	62	155	0	217			X	D,B,A(i)	2,445
Sandy #3	00113	4,491	C	282	185	21	0	0	21			X	D,B(i), A(i)	303
Sanpitch	01723	360	C	0	0	21	0	0	21	48	37		D,E	69
Sawmill Basin	–	9,328	–	0	0	181	210	0	391			X	D,B	391
Seven Mile	00731	17,333	I	723	112	165	0	0	165				D,E,A	888
Sevier River	06049	50	C	80	0	10	0	0	10				D,E	90
Sewing Machine	00902	55,549	I	1,599	0	1,064	0	0	1,064			X	D,S	2,663
Slickrock/Little Rockies	00105	33,685	–	0	0	660	0	0	660			X	D,S	660
South Hollow	01724	2,096	I	200	92	201	0	0	201				D,E	401
South Narrows	00843	12,755	I	670	389	281	0	0	281				D,E,A	951
South Valley	01725	17,637	M	849	0	227	0	0	227				D,E	1,076
Spring Branch	00733	452	C	11	0	35	0	0	35				D,E	46
Steele Butte	00115	73,931	I	4,554	0	488	682	0	1,170			X	D,B,A(i)	5,724
Swedes Canyon	01726	2,823	M	428	0	77	0	0	77				D	505
Sweetwater	25086	70,120	I	3,922	1,289	0	0	0	0				D,A	3,922
Teasdale Bench	00736	1,118	C	98	55	9	0	0	9				D	107
Teasdale Ranch	00737	921	C	58	0	10	0	0	10				D	68
Ten Mile	00845	3,919	M	149	181	207	0	0	207				D,E	356
Timber Canyon	01727	13,317	M	654	0	750	0	0	750				D,E	1,404
Torrey Town	00739	9,199	C	388	108	10	0	0	10			X	D	398

Allotment Name	Alltmnt Number	Public Acres	Mgt Cat	Livestock AUMs		Wildlife AUMs				Mgmt AUMs		No Dom. Sheep	Kinds of Wildlife Present	Total Active AUMs Allotted
				Active	Suspnd	Wildlife	Bison	Burro	Total	Active	Suspnd			
Trachyte	00116	51,488	M	3,014	818	391	14	0	405			X	D,E(e),B (i),A(p),S	3,419
Twelvemile	01728	160	C	0	0	7	0	0	7	11	88		D,E	18
Twist	00223	5,307	M	209	158	52	0	0	52				D,E	261
Uinta	01729	566	C	130	0	20	0	0	20				D,E	150
Under the Rim	01730	1,059	C	72	214	29	0	0	29				D	101
Washburn	–	595	–	0	0	21	0	0	21				D,E	21
Waterpocket	00117	37,902	M	3,007	407	206	0	0	206			X	D,S(p)	3,213
West Freemont	00742	1,429	C	83	82	43	0	0	43				D,E	126
West Side	01731	3,506	M	405	434	84	0	0	84				D	489
Wild Horse	00613	80,136	C	1,522	573	128	0	0	128			X	D,S(p)	1,650
Wildlife	–	320	–	0	0	4	0	0	4				D,E	4
Willow Spring	00612	7,350	I	304	0	0	0	0	0			X	D,E	304
Wood Hollow	01732	3,715	–	0	0	102	0	0	102	100	113		D,E	202
TOTAL				**108,543**	**22,93325**	**32,545[1]**	**3,528**	**0[1]**	**36,673**	**986**	**238**			**146,202**

Wildlife Key: D= Deer; E= Elk; B= Bison; A= Antelope; S= Bighorn Sheep; (i)= Infrequent or occur on only a small part within the allotment; (e)= Species occurs within the allotment but is targeted for elimination by UDWR; (p)= Potential for species within the allotment

Note:
1) Changes in the Wild Horse and Burro management alternatives cause this figure to vary by alternative. The numbers shown represent the Proposed RMP. For the Robbers Roost Allotment in Alternative C and D, 1,200 AUMs would be allocated to wild burros, 1,826 AUMs would be allocated to wildlife, and 100 AUMs would be allocated to management. That would change the total Active AUM allocations in Alternative C as follows: Wildlife: 32,445; Burros: 1,200; Management: 475. There would be no change in livestock or bison allocations from these changes.

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APPENDIX 8—COAL RESOURCES WITHIN THE RICHFIELD PLANNING AREA

This appendix includes four documents that address coal resources within the Richfield planning area:

1. Coal Resource Evaluation of the Henry Mountains Coal Field, July 2004
2. Coal Resources of the BLM Richfield Planning Area, July 2003
3. Coal Unsuitability Report, Henry Mountains Coal Field (draft), March 2005
4. Coal Unsuitability Report, Wasatch Plateau and Emery Coal Fields (draft), March 2005

Federal regulations provide detailed guidance for addressing coal resources in Bureau of Land Management (BLM) land use planning under 43 Code of Federal Regulation (CFR) 3400, 30 CFR 700, and elsewhere. These regulations are addressed in the Richfield Proposed Resource Management Plan (RMP)/Final Environmental Impact Statement (FEIS), summarized in Table A8-1, and detailed in the attached reports.

Table A8-1. Federal Regulations Related to Coal

Topic	Federal Regulations (30 and 43 CFR)	Richfield PRMP/FEIS
General Direction for Coal in Land Use Planning	43 CFR 3420.1-4 (a) The Secretary may not hold a lease sale under this part unless the lands containing the coal deposits are included in a comprehensive land use plan. 43 CFR 3420.1-4 (d) A comprehensive land use plan…shall contain an estimate of the amount of coal recoverable by either surface or underground means or both.	The two coal resource evaluations included in this appendix identify lands containing coal deposits, including estimates of the amount of coal recoverable by surface and underground means.
Call for Coal Resource Information	43 CFR 3420.1-2 (a) Prior to or as part of the initiation of a land use plan…a Call for Coal Resource Information shall be made to formally solicit indications of interest and information on coal resource development potential and on other resources which may be affected by coal development…	A "*Call for Coal Resource and Other Resource Information for Public Lands in Garfield, Piute, Sanpete, Sevier, and Wayne Counties, Utah*" was published in the Federal Register on May 2, 2003. During the 30-day comment period, two responses were received, one from the State of Utah School and Institutional Lands Administration and the other from the State of Utah Division of Oil, Gas and Mining.
Coal Screening Process	43 CFR 3420.1-4 (e) The major land use planning decision concerning the coal resource shall be the identification of areas acceptable for further leasing which shall be identified by the [four step] screening process below:	

Topic	Federal Regulations (30 and 43 CFR)	Richfield PRMP/FEIS
Coal Screening Process Step 1: Coal Report	43 CFR 3420.1-4 (e) (1) Only those areas that have development potential may be identified as acceptable for further consideration. The [BLM] shall estimate coal development potential… Where such information is determined to indicate development potential for an area, the area may be included in the land use planning evaluation for coal leasing.	A coal resource evaluation for the Richfield Field Office (RFO) was completed in June 2003. A coal resource evaluation for the Henry Mountain coal field was completed and signed in September 2004. Estimates of amounts of coal recoverable by surface and underground mining are included in the evaluations.
Coal Screening Process Step 2: Coal Unsuitability	43 CFR 3420.1-4 (e) (2) The [BLM] or the surface managing agency conducting the land use planning shall, using the unsuitability criteria and procedures set out in subpart 3461 of this title, review Federal lands to assess where there are areas unsuitable for all or stipulated methods of mining… (The unsuitability criteria are listed under 43 CFR 3461.5.)	Draft unsuitability reports for the Wasatch Plateau and Emery and Henry Mountains coal fields, developed in consultation with the U.S. Fish and Wildlife Service (USFWS), the U.S. Forest Service (USFS), and the State of Utah, are included in this appendix. The public is invited to comment on these reports at this time. Following an analysis of comments, final unsuitability reports will be included in the final Environmental Impact Statement (EIS).
Disclosure of Application of Unsuitability Criteria in the RMP.	43 CFR 3461.2-1 (b) (1) The authorized officer shall describe in the comprehensive land use plan…the results of the application of each unsuitability criteria, exception and exemption [and]…shall state…those areas which could be leased only subject to conditions or stipulations to conform to the application of the criteria or exceptions. Such areas may be ultimately leased provided that these conditions or stipulations are contained in the lease.	The application of the unsuitability criteria is described in the unsuitability reports.
Public Comment on Unsuitability	43 CFR 3461.2-1 (a) (2) Public comments on the application of the unsuitability criteria shall be solicited by a notice published in the Federal Register. This call for comments may be part of the call for public comments on the draft land-use or land-use analysis.	The Notice of Availability for the Draft Resource Management Plan and Draft Environmental Impact Statement includes this statement on the unsuitability analysis: "The application of the Federal coal unsuitability criteria to the Henry Mountain and Emery coal fields is included in Appendix D of the draft environmental impact statement. As required by 43 CFR 3461.2-1(a) (2), the public is invited to comment on the results of the application of the criteria and the application process used. The criteria are listed under 43 CFR 3461.5."
Adequacy of Data Used in Unsuitability Determinations	43 CFR 3461.2-2 (b) (2) …The comprehensive land use plan…shall include an indication of the adequacy and reliability of the data involved…	Draft unsuitability determinations were made in consultation with the USFWS, USFS, and the State of Utah. They are now open for public comment.

Topic	Federal Regulations (30 and 43 CFR)	Richfield PRMP/FEIS
Revising the Unsuitability Determinations After the RMP Is Approved	43 CFR 3461.2-2 (c) Any unsuitability assessments which result from either a designation or a termination of a designation of Federal lands as unsuitable by the Office of Surface Mining Reclamation and Enforcement, or from changes warranted by additional data acquired in the activity planning process, may be made without formally revising the comprehensive land use plan…	This topic is outside the scope of the RMP.
Petition Process for Unsuitability	30 CFR 769.11 Any person having an interest which is or may be adversely affected by surface coal mining operations to be conducted on Federal lands may petition the Secretary to have an area designated as unsuitable for all or certain types of surface coal mining operations, or to have an existing designation terminated… For the purpose of this section, a person having an interest which is or may be adversely affected must demonstrate how he or she meets an "injury in fact" test by describing the injury to his or her specific interests and demonstrate how he or she is among the injured.	This topic is outside the scope of the RMP.
Coal Screening Process Step 3: Multiple Use Analysis	43 CFR 3420.1 (3) Multiple land use decisions shall be made which may eliminate additional coal deposits from further consideration for leasing to protect other resource values and land uses that are locally, regionally, or nationally important or unique and that are not included in the unsuitability criteria… Such values and uses include, but are not limited to, those identified in section 522(a)(3) of the Surface Mining Reclamation and Control Act of 1977 and as defined in 30 CFR 762.51. In making these multiple use decisions, the [BLM] or the surface managing agency conducting the land use planning shall place particular emphasis on protecting the following: Air and water quality; wetlands, riparian areas and sole-source aquifers; the Federal lands which, if leased, would adversely affect units of the National Park System, the National Wildlife Refuge System, the National System of Trails, and the National Wild and Scenic Rivers System.	This step will be completed if and when there is interest in coal leasing. The USFS will complete this analysis for the national forest lands in its land use planning process.

Topic	Federal Regulations (30 and 43 CFR)	Richfield PRMP/FEIS
Coal Screening Process Step 4: Consultation With Other Surface Owners	43 CFR 3420.1-5 (4) (i) While preparing a comprehensive land use plan or land use analysis, the [BLM] shall consult with all surface owners who meet the criteria in paragraphs (gg) (1) and (2) of 3400.0-5 of this title, and whose lands overlie coal deposits, to determine preference for or against mining by other than underground methods.	This step will be completed if and when there is interest in coal leasing.
Hearing Requirements	3420.1-5 After public notice, the [BLM] or other surface management agency shall conduct a public hearing on the proposed comprehensive land use management plan analysis if it involves the potential for coal leasing before it is adopted if such a hearing is requested by any person who is or may be adversely affected by the adoption of the plan. A hearing conducted under part 1600 of this title of this chapter shall fulfill this requirement.	The Notice of Availability for the Draft Resource Management Plan and Draft Environmental Impact Statements includes this statement: "…Additionally, the BLM shall conduct a public hearing on the proposed comprehensive land use plan if it involves the potential for coal leasing before it is adopted if such a hearing is requested by any person who is or may be adversely affected by adoption of this plan."

30 CFR 762.5 Definitions. For the purposes of this part:

Fragile lands means areas containing natural, ecologic, scientific, or esthetic resources that could be significantly damaged by surface coal mining operations. Examples of fragile lands include valuable habitats for fish or wildlife, critical habitats for endangered or threatened species of animals or plants, uncommon geologic formations, paleontological sites, National Natural Landmarks, areas where mining may result in flooding, environmental corridors containing a concentration of ecologic and esthetic features, and areas of high recreational value due to high environmental quality.

Historic lands mean areas containing historic, cultural, or scientific resources. Examples of historic lands include archaeological sites, properties listed or eligible for listing on a state or national register of historic places, national historic landmarks, properties having religious or cultural significance to Native Americans or religious groups, and properties for which historic designation is pending.

Natural hazard lands means geographic areas in which natural conditions exist which pose, or as a result of surface coal mining operations, may pose a threat to the health, safety or welfare of people, property or the environment, including areas subject to landslides, cave-ins, large or encroaching sand dunes, severe wind or soil erosion, frequent flooding, avalanches and areas of unstable geology.

Renewable resource lands mean geographic areas which contribute significantly to the long-range productivity of water supply or food or fiber products, such lands to include aquifers and aquifer recharge areas.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND
MANAGEMENT

MINERAL REPORT

COAL RESOURCE EVALUATION OF THE HENRY MOUNTAINS COAL FIELD, GARFIELD AND WAYNE COUNTIES, UTAH

(Title)

LANDS INVOLVED

Tps. 27-34 S., Rs. 7-11 E.
Salt Lake Meridian

Prepared By:

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(Signature)

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(Title)

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(Date)

Technical Approval:

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(Signature)

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Management Acknowledgement:

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COAL RESOURCE EVALUATION OF THE HENRY MOUNTAINS COAL FIELD

INTRODUCTION

The Bureau of Land Management (BLM) is preparing a land use plan, referred to as a Resource Management Plan (RMP), which will address the management of public land that is administered by the Richfield Field Office. Coal is one of the resources that will be addressed in this plan. To plan for coal exploration and development, the areas with a coal resource, the quantity of recoverable coal, and the development potential must be identified to the extent feasible.

In this report, the coal resources in the Henry Mountains coal field are evaluated to determine the public land that should be considered for the Federal leasing of coal resources. The conclusions in this report are limited to the action prompting this review and are not intended for any other purpose.

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Coal resources have been identified in the Ferron Sandstone and Muley Canyon Sandstone Members of the Mancos Shale in the Henry Mountains coal field. The Dakota Sandstone also contains coal beds, but the coal is not considered a resource. Total, in-place, coal resources considered to have development potential by surface and underground methods are 278.6 million tons in the Ferron Sandstone and 1,472.1 million tons in the Muley Canyon.

Coal resources in central Utah, namely the Wasatch Plateau and Book Cliff coal fields, are expected to meet the demand for Utah coal in the next 15 years or longer, assuming market conditions do not change significantly. The above described Henry Mountains coal field is an additional coal resource that has development potential.

It is recommended that those areas in the Henry Mountains coal field with a coal resource that have development potential be considered for coal leasing in the planning for the RFO. Those areas are identified on maps contained in this report.

ACKNOWLEDGEMENT

This resource evaluation is based primarily on recent published reports by Tabet (1999, 2000) and an unpublished report by Tabet (2002). Tabet's reports provide an adequate evaluation of the coal resources that allows for an assessment of the coal potential as part of land use planning and the preparation of a RMP. I would like to gratefully acknowledge David E. Tabet, Utah Geological Survey, for granting permission to use his reports as the basis for this evaluation.

LANDS INVOLVED

The lands involved are public lands managed by the RFO within the Henry Mountains coal field (Figure 1). The coal field is defined by the outcrop boundary of the Ferron Sandstone Member of the Mancos Shale.

The coal field is approximately 48 miles long in a north–south direction and up to 18 miles wide in an east–west direction. Generally, the land is located within Tps. 27-34 S., Rs. 8-11 E., SLM, Garfield and Wayne counties, Utah.

State Highway 24, which is a main highway to Hanksville and the Henry Mountains area, crosses the northern part of the coal field. The Notom Road, from Highway 24 southward, provides general access to the west side of the field. The Notom Road is paved at its north end.

No rail lines are developed in the area. The nearest railroad is at Green River, which is 60 miles away.

Surface and mineral ownership is shown in Figure 2. No Federal coal leases are currently held on the subject public lands. Federal leases for other mineral resources and mining claims were not checked for this report because the resulting information would not have a bearing on determining coal resources. Portions of the coal field are included within designated wilderness study areas (WSAs). As WSAs are not relevant to determining where coal resources may be situated on the ground, WSAs are not addressed in this report. However, WSAs will need to be addressed in the land use planning process through the application of unsuitability criteria.

A portion of the subject lands has been classified as a Known Recoverable Coal Resource Area (KRCRA) (Figure 3). At one time, KRCRA was a classification used to identify lands that met the minimum standards for recoverable coal in accordance with standard mining methods and to designate lands that would be leased through a competitive process. Under current Federal regulations, coal is leased by a competitive process.

PHYSIOGRAPHIC SETTING

The Henry Mountains coal field is in the Colorado Plateau physiographic province (Stokes 1986) as displayed in Figure 4. The Colorado Plateau is characterized by relatively undeformed Paleozoic and Mesozoic sedimentary strata, but in places, the strata are folded into monoclines and anticlines and are displaced by faults. The coal field is mostly in the Henry Mountains subdivision, with the northern part extending into the Green River Desert.

The Henry Mountains coal field lies between the Henry Mountains on the east and the Waterpocket Fold on the west. The Henry Mountains contain several prominent peaks that are greater than 11,000 feet in elevation which were formed by igneous intrusions, referred to as laccoliths, which have domed the surrounding sedimentary strata. The Waterpocket Fold is a monocline on the east flank of the Circle Cliffs and is a prominent, regional ridge (reef) that is the main physiographic feature of Capitol Reef National Park. Other landforms include buttes and mesas, such as Factory Butte and Swap, Tarantula, Cave Flat, and Wildcat Mesas. Factory Butte is the prominent landform at the northern end of the field; Swap Mesa is near the southern end. The low point in elevation is 4,600 feet at the northern end of the coal field.

The terrain in the coal field is generally rugged and dissected by stream channels. Most channels are ephemeral, with the exception of the Fremont River, which cuts the North and South Caineville mesas, which are on the north end of coal field.

GEOLOGIC SETTING

Stratigraphy

The exposed bedrock near the Henry Mountains coal field is predominantly sedimentary strata of Jurassic and Cretaceous age (see Figures 5 and 6). The Jurassic strata crop out around the perimeter of the coal field while the Cretaceous strata are exposed in the center. These formations contain conglomerate, sandstone, and shale or mudstone of variable thickness and distribution, and were deposited in various marine, marine shoreline, deltaic, fluvial, and continental environments. The peaks of the Henry Mountains are dioritic igneous intrusive rocks. The regional stratigraphy is well described in other reports, namely Hunt et al.(1953) and Doelling (1972), and is not the focus of this report.

The coal-bearing units in the coal field are part of the Dakota Sandstone and Mancos Shale, which are Upper Cretaceous in age. Nomenclature of the Upper Cretaceous stratigraphy, in particular the Mancos Shale, has been developed through numerous investigations and has been revised through the years. Gilbert (1877) and Spieker and Reeside (1926) completed early studies in the basin, and in recent years, Peterson et al. (1975, 1980), Smith (1983), and Eaton (1990) proposed changes to the nomenclature. Peterson et al. determined that the sandstone unit between the Blue Gate and Masuk Members of the Mancos Shale in the Henry Mountains basin did not correlate with the type section of the Emery Sandstone at the Wasatch Plateau. Smith recommended that the Emery Sandstone Member in the Henry Mountains basin be named the Muley Canyon Sandstone, replacing the name Emery Sandstone. Eaton proposed formation status for the Masuk and Muley Canyon Sandstone Members, and that the coal-bearing strata of the Muley Canyon should be included in the Masuk Formation. In addition, the Mesaverde Formation is now named the Tarantula Sandstone.

Tabet (1999, 2000) adopted the stratigraphy proposed by Smith (1983), although the changes proposed by Eaton (1990) may better reflect stratigraphic relationships (Figure 7). As Tabet was compiling geologic information from existing maps, using Eaton's proposal would have made correlation more difficult and Smith's nomenclature could be easily adopted. Because this report is based primarily on Tabet (2000), the Upper Cretaceous stratigraphic nomenclature that will be utilized for this report, in ascending order, is the Dakota Sandstone; the Tununk, Ferron Sandstone, Blue Gate, Muley Canyon Sandstone, and Masuk Members of the Mancos Shale; and the Tarantula Sandstone.

Structure

The coal field lies in a structural basin, the Henry Mountains syncline, which is asymmetric and has a north-trending axis. The syncline lies between the Waterpocket Fold on the west and the Monument Uplift to the east. Strata exposed on the west limb of the syncline, the Waterpocket Fold, dip easterly at 20 to 30 degrees, whereas in the central part of the basin, strata are nearly horizontal in aspect. The east side of the coal field is defined by the Henry Mountains, where strata have a generally westerly dip of 10 degrees.

HISTORY OF COAL EXPLORATION AND DEVELOPMENT

Coal has historically been mined from the Henry Mountain coal field for primarily local use. Coal in the Ferron Sandstone was mined from the Stanton mine at the south end of the field from 1888 to 1900 to supply power for gold dredges on the Colorado River. A mine near Factory Butte, also in the Ferron Sandstone, operated from 1908 to the 1950s and was re-opened in 1978 for a short period of time, when coal was hauled to Green River. There was active mining in Muley Canyon at Sweetwater Creek and

Dugout Creek from about 1914 until the 1940s. Coal from these two mines was used to supply power for drill rigs in the Green River Desert.

In the 1970s Amax leased Federal land in the Henry Mountain coal field and exploration for surface minable coal was conducted by several companies. Since the mid-1980s, exploration and development for Federal coal on Federal land has not been authorized in this area.

Total production for the coal field is reported at about 59,000 tons of coal (Doelling and Smith 1982). Most of this production was from the Factory Butte area at the north end of the field.

METHODOLOGY

Tabet (2000) evaluated coal data that had been collected by subsurface investigations completed by coal companies and the U.S. Geological Survey (USGS) during the 1970s and early 1980s and through outcrop studies by the Utah Geological Survey during the late 1980s. Outcrop data were used only if representative of the full thickness of the coal section. The data for the Ferron Sandstone and the Muley Canyon Sandstone Members of the Mancos Shale were used to determine the thickness of the coal zone (isopach) and the depth to the coal zone (overburden). Then, coal resources were identified in accordance with USGS guidelines. A mineral resource is a concentration of naturally occurring material in such form and amount that economic extraction of a commodity from the concentration is currently or potentially feasible (USGS Circular 831). Tabet (2000, p. R7) defined demonstrated, inferred, and hypothetical resources as—

"Demonstrated resources lie within 0.75 mi from a thickness-measurement point, inferred resources are between 0.75 and 3 mi from a thickness-measurement point, and hypothetical resources lie more than 3 mi from a thickness-measurement point."

Tabet further classified resources using the following depth categories: less than 100 feet, 100 to 1,000 feet, and 1,000 to 2,000 feet. Coal resources in the Ferron Sandstone and Muley Canyon Sandstone generally lie at depths of less than 2,000 feet.

Drill hole and outcrop samples and data were not examined for this assessment. Isopach and overburden maps from Tabet (2000) were used to delineate public lands with a coal resource. Individual coal beds were not identified by Tabet, rather the aggregate thickness of coal beds that are greater than 1 foot were used to determine a resource.

The mining method selected for extracting coal depends on the thickness of the coal bed(s) and the depth to the coal. Assessments of the coal potential in the Henry Mountains coal field and at other coal fields have used variable parameters. The parameters selected depend on the coal resource, the reliability of the data, and the current mining practices. In the Henry Mountains coal field, Doelling (1972) used a 4-foot mining thickness, whereas, a coal development potential report completed by Dames and Moore for the USGS in 1980 used a 5-foot mining thickness and a depth of 100 feet as break between surface and underground mining methods. Tabet (2002) used an approximate 7-foot thickness and 200-foot depth to assess coal resources in the Wasatch Plateau and Book Cliffs coal field in Carbon and Emery counties. Tabet (2003, in preparation and personal communication) is using a 4-foot thickness and a depth of less than 200 feet for surface mining and a 6-foot thickness and a depth of greater than 200 feet for underground mining in the Emery coal field in Sevier County.

For this report, coal resources that are greater than 2 feet in thickness and that have less than 100 feet of overburden are considered to have potential for development by surface mining methods. Underground,

conventional mining methods were considered applicable to coal resources that are 6 feet or greater in thickness and that have a depth of 100 feet or more. These parameters are adaptable to the data at hand from Tabet (1999, 2000) without a need to re-grid and re-tabulate the coal data points. By using a 6-foot thickness for underground mining, the deeper resource may be somewhat under-reported in terms of quantity and acreage. For purposes of delineating public land that should be furthered considered for coal leasing, this methodology is considered adequate for land use planning. For purposes of leasing, minable coal beds would need to be determined.

In this report, although all tonnage quantities are short tons, they are referred to simply as tons. Resource estimates are made without regard to surface or mineral estate; however, most of the land is public land managed by the BLM (Figure 2).

MINERAL DEPOSITS

Coal-bearing strata in the Henry Mountains basin are contained in three Upper Cretaceous stratigraphic units: the Dakota Sandstone and the Ferron Sandstone and Muley Canyon Sandstone Members of the Mancos Shale.

Dakota Sandstone

The Dakota Sandstone has a maximum thickness of 92 feet and has an average thickness of 35 feet; the Dakota Sandstone thickens from the north end of the coal field to the southwest (Hunt, et al. 1953; Peterson, et al. 1983, Tabet 2000). Coal beds within the Dakota Sandstone are thin, usually 2 feet or less in thickness, and their lateral extent is limited and discontinuous (Tabet 2000). Therefore the Dakota Sandstone does not have a coal resource that warrants consideration for development potential.

Ferron Sandstone Member

The Ferron Sandstone contains a lower marine unit and an upper non-marine unit. The upper unit averages 110 feet in thickness and contains a coal resource in a 50-foot interval that overlies the lower marine unit. The coal interval in the Ferron Sandstone consists of one to five beds that have a cumulative thickness of 16.5 feet; the average thickness of the individual coal beds is 1 to 3 feet and is rarely more than 4-feet (Tabet 2000).

The Ferron coal is not uniformly distributed across the coal field and is found in discontinuous pods that are 1 to 5 miles wide and 3 to 10 miles long (see Figure 8). The coal pods are primarily oriented lengthwise in an east-west direction, which may reflect deposition in swamps and fluvial channels or may reflect erosion prior to the deposition of the Blue Gate Member. Three areas, one each in the northern, central, and southern parts of the coal field, contain the thickest coal deposits. The assessment of the coal deposits of the Ferron Sandstone in the central area of the coal field has primarily been extrapolated from data collected from one oil and gas well.

The Ferron Sandstone is exposed in outcrop around the margins of the Henry Mountains coal field (see Figure 8). Coal in the Ferron Sandstone is not present in much of the coal field because of the discontinuity of the coal beds. Thus, the depth to the top of the Ferron Sandstone is mapped, rather than the depth to the Ferron coal. The top of the Ferron Sandstone is a close approximation to the top of the coal because the coal is in the upper part of the sandstone. The Ferron Sandstone is deeper toward the axis of the basin because of the synclinal nature of the Henry Mountains basin. The deepest part is east of Tarantula Mesa, where the depth slightly exceeds 2,000 feet. Most of the Ferron Sandstone is less than 1,000 feet in depth.

Coal Quality

Limited sampling and analysis have been completed on the Ferron coal. Four coal samples have been analyzed, including three from the northern and one from the southern parts of the coal field. Based on these four samples, Tabet (2000, p. R10) states that the apparent rank of the coal is high-volatile C bituminous and that the average for proximate analysis is 14.5% ash, 2.5% sulfur, 11,038 British thermal units (Btu) per pound, 5.8% moisture, 34.8% volatile matter, and 44.9% fixed carbon.

Muley Canyon Sandstone Member

Tabet (2000, p. R14) describes the Muley Canyon coal as follows:

"The upper part of the Muley Canyon Member is a nonmarine coal-bearing interval with thicknesses ranging from 92 to 209 ft thick and averaging 150 ft. This stratigraphic interval, referred to as the Muley Canyon coal zone * * * commonly contains three to four coal beds, but locally has as many as 10 beds. Individual beds range from 0 to 13.4 ft thick and are commonly 2-5 ft thick; aggregate thickness of coal is as much as 27.5 ft. * * * Most of the area underlain by this zone has at least 5 ft of total coal, and about half of the area has 10 ft or more of total coal."

The Muley Canyon coal is distributed more widely in the coal field than the Ferron Sandstone coal (see Figure 9). Similar to the Ferron Sandstone coal, the Muley Canyon coal is thickest near the central part of the Henry Mountains basin in pods that are oriented lengthwise in an east–west direction. The pods tend to be thicker on the west side of field.

The shallower coal beds (depths less than 100 feet) are generally exposed around the perimeter of the coal field. Most of the shallow coal is at the north and south ends of the extent of the Muley Canyon in the general area of Wildcat Mesa, Cave Flat, and Swap Mesa. The deepest coal, at slightly more than 1,000 feet, is under Tarantula Mesa where the coal zone is thicker than 24 feet.

Coal Quality

The Muley Canyon coal has been sampled in more detail than the Ferron Sandstone coal, although the samples are again mostly from the shallower coal beds at the northern and southern ends of the coal field. Based on 7 outcrop samples and 30 drill hole samples, the Muley Canyon coal's rank is sub-bituminous A to high-volatile bituminous C (Tabet 2000, p. R14). The average for proximate analyses of the Muley Canyon coal samples are 11.74% ash, 0.9% sulfur, 10,086 Btu per pound, 12.1% moisture, 35.34% volatile matter, and 40.82% fixed carbon, and the range in heat content is 7,710 to 12,491 Btu. Compared with the Ferron Sandstone coal, the Muley Canyon coal is a lower rank, has lower contents of heat, ash, and sulfur and has higher moisture content. In comparison with coal from the Wasatch Plateau and Book Cliff fields that averages 10% ash, 0.5-0.7% sulfur, and 11,500-12,900 Btu, the Muley Canyon coal has higher ash and sulfur contents and lower heat (Tabet 2000, 2002).

Thirteen samples from ash of the Muley Canyon coal were analyzed for major oxides. Major oxides are used to evaluate the potential for boiler slagging and fouling. Slagging and fouling refer to the accumulation of molten ash and sintered material in different parts of the boiler, and these build-ups could decrease boiler efficiency and life and increase operating costs. The ratio of the sum of the CaO and MgO to Fe2O3 determines whether the ash is lignitic or bituminous. In addition, NaO is indicative of fouling properties of the ash. Most of the Muley Canyon coal ash samples were lignitic and fell in the low fouling range.

Although more sampling has been completed in the Muley Canyon coal than the Ferron Sandstone coal, the sample population of the Muley Canyon is very small in comparison with typical sampling for resource evaluation in a field under exploration and development or for quality control in producing fields, such as those in central Utah. Tabet (2000) infers that quality control, blending of coals, selective mining, and selective washing of Muley Canyon coal could produce a low ash, low sulfur coal with low slagging and fouling characteristics that would be similar to other coal currently mined and produced in central Utah.

ECONOMIC EVALUATION

Worldwide and National Markets

The markets for coal have not been steady in recent years; however, consumption has remained constant on a worldwide scale (Guzzino 2003). The market for exported coal is now a prominent feature of global trade, and coal companies increasingly compete in a global market.

The prediction for markets varies from country to country. In the United States, coal consumption has been about 1.05 billion tons of coal for approximately the last 5 years (Guzzino 2003). This demand is predicted to remain fairly level for the next several years; however, improvement in the U.S. economy and technological changes could increase the demand.

In 2002, 1.1 billion tons were produced in the United States (Guzzino 2003). Warehouse stocks in the United States have remained at about 150 to 190 million tons. Electric power production is the largest market for coal in the United States, which commands about 88% of the total production. That demand has been fairly constant for several years. Because of the stability in demand, coal prices have also remained constant, at about $17 per ton.

Although other energy sources, such as natural gas or renewable resources, seem to have fewer environmental impact issues associated with them, the coal industry appears to be dedicated to finding ways to make coal a clean energy source in order to remain competitive with other fossil fuels and non-fossil fuels as part of the Climate Change initiative and the Clear Skies initiative (Guzzino 2003). Guzzino forecasts that "(t)he U.S. expects to gain greater utilization of its coal-fired power-generating capacity from the addition of new coal-burning units. While details surrounding new coal-fired generators still remain cloudy and idealistic, the subject of new nuclear capacity remains taboo, and renewable resources are still in their infancy…while demand for coal isn't expected to skyrocket, it doesn't seem to be diminishing either."

Utah Coal Markets, Production, and Coal Resources

Tabet (2002) reported that 27 million tons were produced in 2001 from mines in Utah, and the price for coal increased slightly. The active mines are large, efficient producers that use longwall mining technology. Five companies operate 11 mines in the state, and production from individual mines ranged from fewer than 1 million tons per year to 7 million tons per year in 2001. Since 1993, production from Utah has increased about 22%, an increase attributed to Utah's low-sulfur, high-quality, bituminous coal, which is favorable for compliance with Federal emission standards. The markets for Utah coal are electrical power, industrial, export to Pacific Rim nations, and residential and commercial customers, in descending order of significance.

In Utah, production has historically been mostly from underground mines in central Utah, namely in three coal fields—the Wasatch Plateau, Book Cliffs, and Emery fields (Tabet 2002). Production from the

Wasatch Plateau and Book Cliffs has exceeded that of Emery. Historically, other smaller fields in Utah have also produced but have not been as important as these three fields.

The Wasatch Plateau field in Carbon, Emery and Sevier counties has been the largest producer, with a total production of 523.7 million tons through 2001 from more than 80 mines (Tabet 2002). In 1986, production was about 14 million tons, and in 2001, production increased to 22 million tons. Approximately 81% of the total production in Utah in 2001 came from eight mines in the Wasatch Plateau field.

In the portion of the Wasatch Plateau field in Carbon and Emery counties, the remaining in-place resources that are available for mining are estimated at 1,054.8 million tons (Tabet 2002). That resource estimate is based on coal beds that are mostly greater than 7 feet in thickness and that are greater than 200 feet and less than 2,500 feet in depth. Using a 14-foot maximum, mining thickness, which is based on the cutting height of longwall equipment, and applying recoverability factors for individual tracts, the resources are reduced to 686.0 million tons. At a yearly production rate of 14 million tons, this recoverable resource would last for 49 years; at 22 million tons, the life would be 31 years. The minable coal resource estimate for that portion of the Wasatch Plateau field in Sevier County is in progress (Tabet 2003, personal communication).

The Book Cliffs field in Carbon and Emery counties is the second largest producer, with a total production of 293.3 million tons through 2001 (Tabet 2002). From 1986 through 1995, production was in the range of 2 to 3 million tons per year, and since 1996, has been 3 to 5 million tons annually. Coal mined from the Book Cliffs accounted for approximately 19% of the Utah production in 2001.

In the Book Cliffs field, the remaining, in-place coal resources that are available for mining are estimated at 409.1 million tons (Tabet 2002). Using the similar parameters as those used for the Wasatch Plateau field, the recoverable resource estimate is 275.2 million tons. If the production rate held steady at 5 million tons per year, these resources would last for 55 years, and if production were to increase to 7 million tons annually, then the life would be 39 years.

The Emery field in Emery and Sevier counties is currently inactive, having ceased production when the last mine was closed in 1990. In 2002, plans were being developed for reopening that mine. For the field, total production through 1990 was 9.5 million tons, and peak production was fewer than 0.6 million tons in 1989.

In the Emery field, the original in-place resources are estimated at 675.8 million tons (Tabet 2002). Tabet, using a 66% recovery factor, estimated the recoverable reserves at 446.0 million tons. If past mining rates in this field were applied, the expected life would be very long.

MINERAL POTENTIAL OF THE HENRY MOUNTAINS COAL FIELD

Within the Henry Mountains coal field, coal resources are assigned a high potential, based on abundant direct and indirect evidence (H/D). Drill hole and outcrop data support that assignment and support that coal resources in the Ferron Sandstone and Muley Canyon Sandstone Members of the Mancos Shale are favorable for development. Coal is also found in the Dakota Sandstone, but based on available data, is not considered a resource.

Coal Resources—Ferron Sandstone Member

Tabet (2000) estimates 683.5 million tons of in-place, coal resources in Ferron Sandstone Member of the Mancos Shale. The reliability of the resource estimate is categorized as 27% as demonstrated, 67% as inferred, and 6% as hypothetical. Greater than two-thirds of the total resources are in the lower confidence categories, inferred and hypothetical, which reflects that the coal has not been drilled adequately to reduce the distance between data points. Approximately 75% of the Ferron Sandstone coal resource is in Garfield County.

In Table A8-2, the coal resource is tabulated by thickness intervals (isopachs) of 2 to 6 feet, 6 to 10 feet, and greater than 10 feet, and by depth (overburden) intervals of zero to 100 feet, 100 to 1,000 feet, and 1,000 to 2,000 feet. The estimates include all coal beds that are thicker than 1 foot. The coal resource is generally thin, which is indicated by the fact that 68% of the total resource is in the thickness interval of 2 to 6 feet.

Table A8-2. Total Ferron Coal Zone Resources by Thickness and Depth of Cover

Depth (ft)	Thickness (ft)								
	2–6			6–10			10+		
	DEM	INF	HYP	DEM	INF	HYP	DEM	INF	HYP
0–100	54.2	5.1	0.0	6.7	2.2	0.0	6.9	0.0	0.0
100–1,000	81.3	187.4	12.8	20.0	84.4	0.0	5.5	0.0	0.0
1,000–2,000	4.3	103.3	16.0	4.5	75.3	9.8	4.0	0.0	0.0
TOTAL	**139.9**	**295.8**	**28.8**	**31.1**	**161.8**	**9.8**	**16.3**	**0.0**	**0.0**

All coal beds are greater than or equal to 1 foot thick; figures in millions of tons. DEM, demonstrated; INF, inferred; HYP, hypothetical. From Tabet (2000). Individual categories may not sum due to rounding in the original spreadsheet.

Based on a 2-foot minimum thickness and a 100-foot depth as the cut-off requirements for surface mining, 75.1 million tons are considered favorable for mining by surface methods. Deeper resources, which are 100 to 2,000 feet deep and which are 6 feet or greater in thickness, total 203.5 million tons and are considered favorable for underground mining methods. The total resource, considered to have development potential by surface or underground methods, is 278.6 million tons, which is 43% of the in-place resource.

Coal Resources—Muley Canyon Sandstone Member

Tabet (2000) estimates 1,526.1 million tons of in-place coal resources in the Muley Canyon Sandstone Member of the Mancos Shale. All of this resource is categorized as either demonstrated or inferred. The demonstrated resource is 62% of the total in-place resource, and the inferred accounts for 38%. The resource, which is almost exclusively in Garfield County, is only 7.5 million tons, which is approximately 0.5% of the total in-place resource in Wayne County.

In Table A8-3, the coal resource is tabulated by thickness intervals (isopachs) of 2 to 6 feet, 6 to 10 feet, and greater than 10 feet and by depth (overburden) intervals of zero to 100 feet, 100 to 1,000 feet, and 1,000 to 2,000 feet. In the Muley Canyon Sandstone, 91% of the coal resource is 6 feet or thicker and 70% is thicker than 10 feet, which is generally thicker than the Ferron coal. At Tarantula Mesa, one bed is

6 to 12 feet thick. In addition, approximately 26% of the resource has less than 100 feet of cover and 71% is at depth of 1,000 feet or less. The estimates include all coal beds that are 1 feet thick or greater.

Table A8-3. Total Muley Canyon Coal Zone Resources by Thickness and Depth of Cover

Depth (ft)	Thickness (ft)						TOTAL
	2–6		6–10		10+		
	DEM	INF	DEM	INF	DEM	INF	
0–100	78.3	4.4	107.4	7.6	172.4	20.9	391.0
100–1,000	42.1	11.3	118.5	75.7	383.7	449.4	1,087.7
1,000–2,000	1.6	0.0	4.9	1.2	36.8	9.9	54.4
TOTAL	**121.9**	**15.8**	**230.9**	**84.5**	**592.8**	**480.2**	**1,526.1**

All coal beds are greater than or equal to 1 foot thick; figures in millions of tons. DEM, demonstrated; INF, inferred; HYP, hypothetical. From Tabet (2000). Individual categories may not sum due to rounding in the original spreadsheet.

Based on a 2-foot minimum thickness and a 100-foot depth as the cut-off requirements for surface mining, 391.0 million tons are considered favorable for mining by surface methods. Deeper resources, which are 100 to 1,000 feet deep and 1,000 to 2,000 feet deep and which are 6 feet or greater in thickness, total 1,080.1 million tons and are considered favorable for mining by underground methods. The total resource, considered to have development potential by surface or underground methods, is 1,472.1 million tons, which is 96% of the estimated, in-place, coal resource.

Development Potential

Past and current mining in Utah has been mainly from two coal fields in central Utah —the Wasatch Plateau and the Book Cliffs. The Emery field, also in central Utah has been the third largest producer. Based on a study by Tabet (2002), these three fields could meet the demand for Utah coal at current production rates for the next 15 years. These fields, especially the Wasatch Plateau and the Book Cliffs fields, have an infrastructure for transportation and accessibility in place. As marketing conditions change nationally and worldwide, the demand for Utah coal could also change, with an increase in demand, or with a decrease driven by the availability of coal from other nations in the global market. In the next 15 years, at current mining rates, the more easily mined central Utah coal may be depleted, and industry may be interested in evaluating other fields, such as the Henry Mountains field. However, at present, development of coal resources in the Henry Mountains field does not seem likely within the time frame of 15 to 20 years, which is the planning horizon of a BLM land use plan.

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FIGURES FOR COAL RESOURCE EVALUATION OF HENRY MOUNTAINS COAL FIELD

Figure 1 – Henry Mountains Coal Field

Figure 2 – Henry Mountains Surface Estate

Figure 3 – Henry Mountains Known Recoverable Coal Resources

Figure 4 – Physiographic Provinces of Utah

Figure 5 – Regional Geographic Provinces

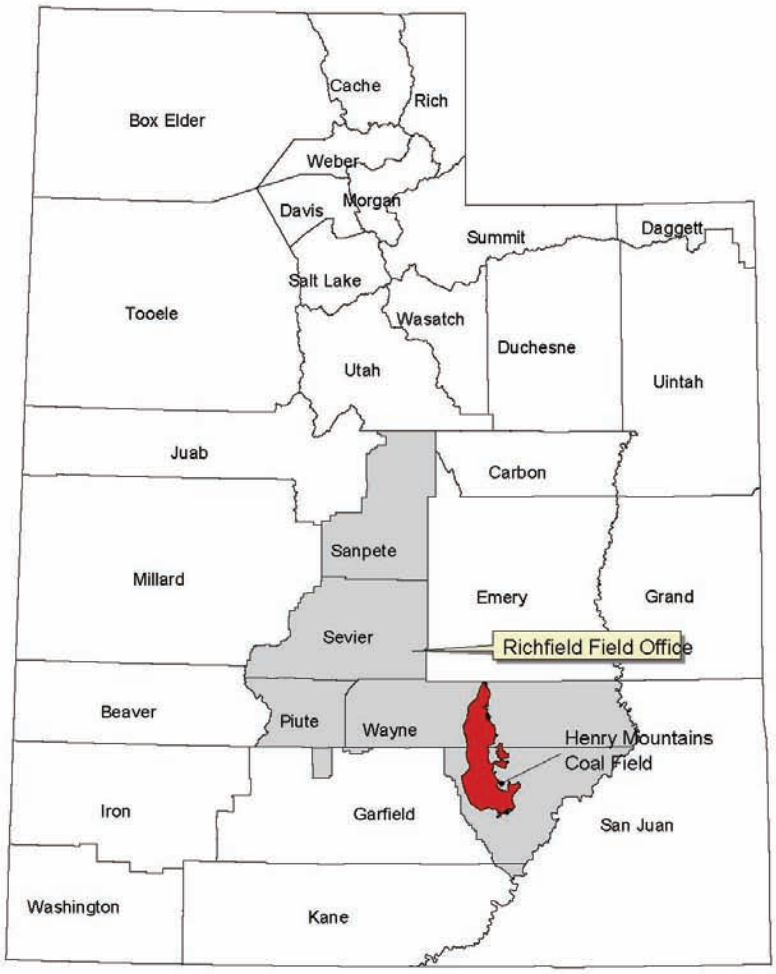
Figure 6 – Regional Stratigraphic Section

Figure 7 – Upper Cretaceous Strategic Nomenclature

Figure 8 – Ferron Coal Zone

Figure 9 – Muley Coal Zone

Figure 1: Location Map of the Richfield Field Office and the Henry Mountains Coal Field



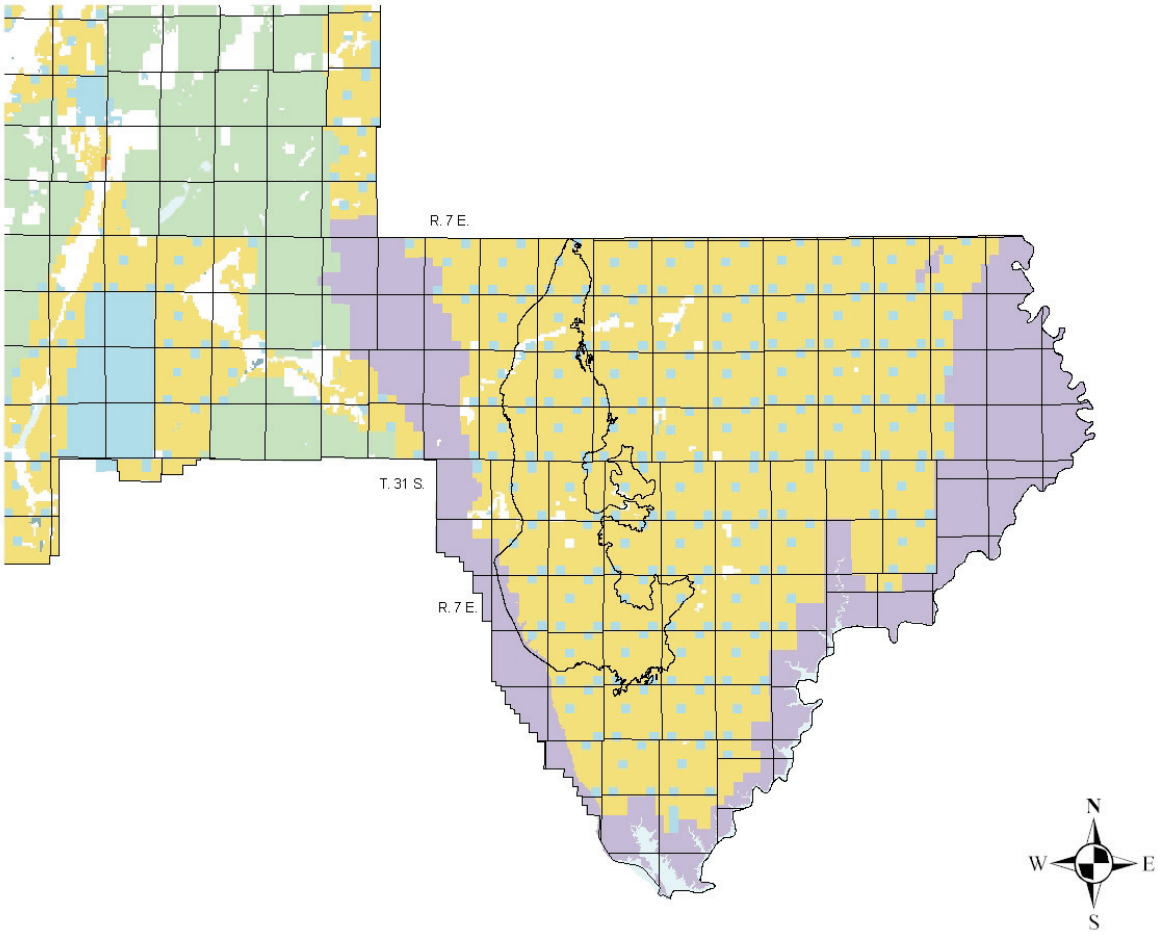
1:3,600,000

0 25 50 75 100 Miles

Source: BLM GIS Data Base and Tabet, 2000

N W E S

Figure 2: Surface Estate in the Vicinity of the Henry Mountains Coal Field



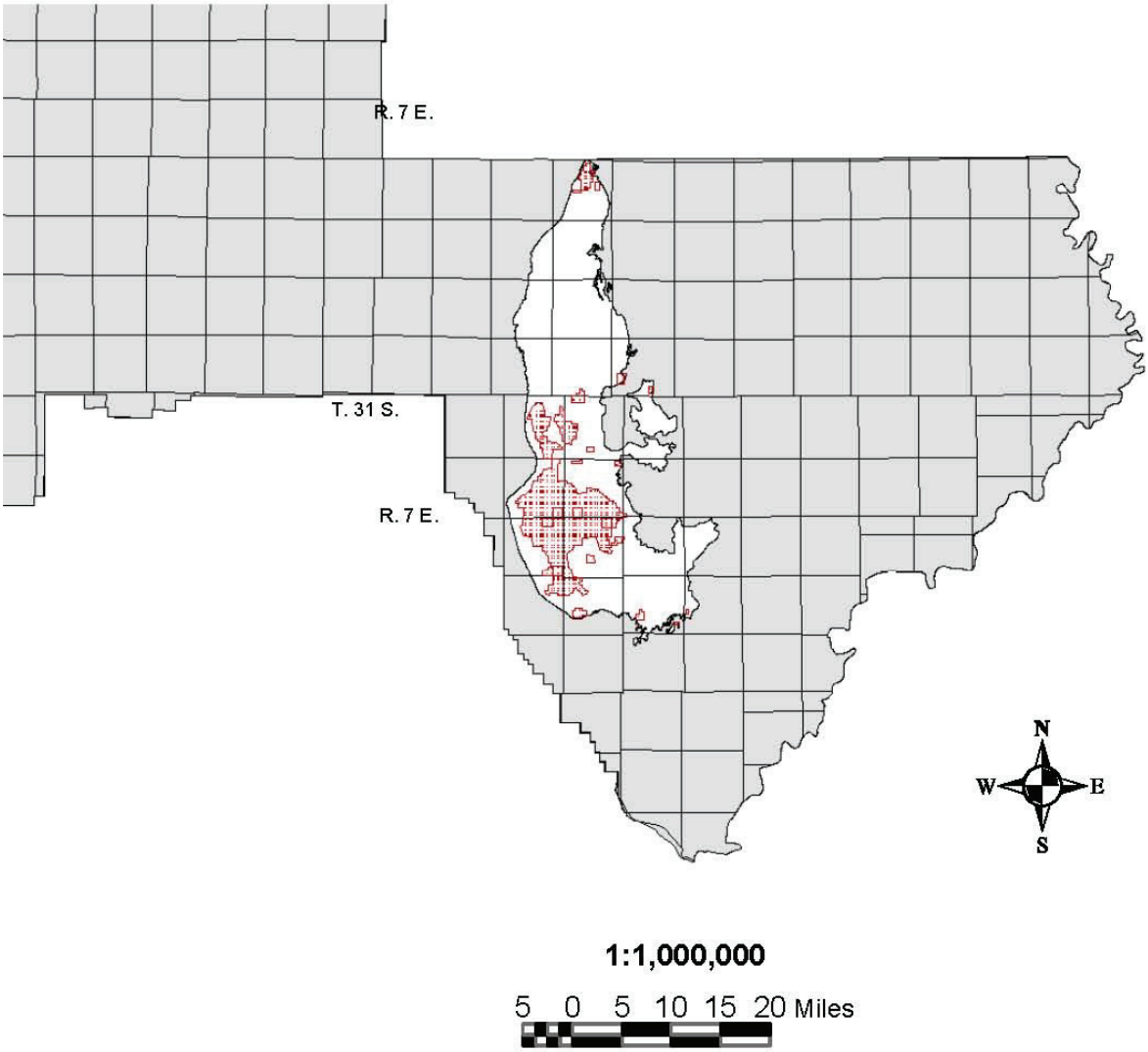
Henry Mountains Coal Field

Surface Estate
- Bureau of Land Management (BLM)
- BLM Wilderness Area
- US Forest Service (USFS)
- National Park Service (NPS)
- Water
- State

1:1,000,000
0 5 10 15 20 Miles

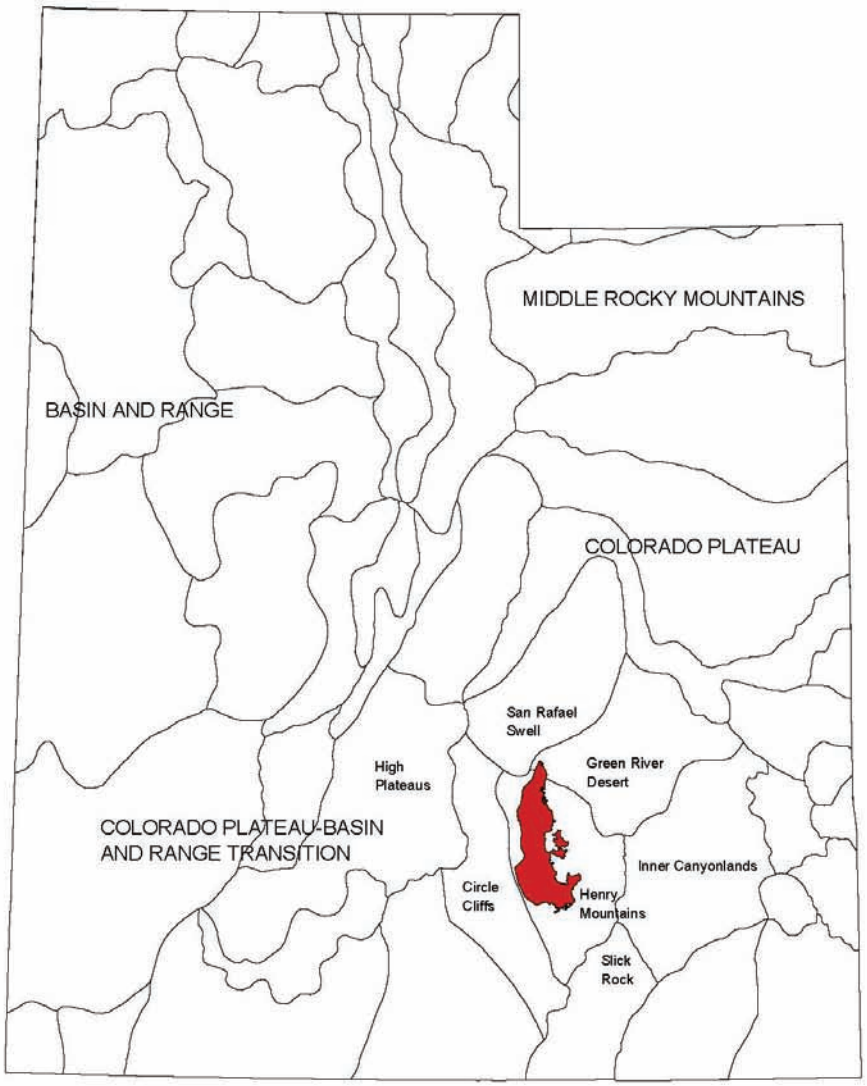
Source: BLM GIS Data Base and Tabet (2000)

Figure 3: Henry Mountains
Known Recoverable Coal Resource Area



Source: BLM GIS Data Base,and Tabet (2000)

Figure 4: Physiographic Provinces and Subdivisons of Utah



50 25 0 50 Miles

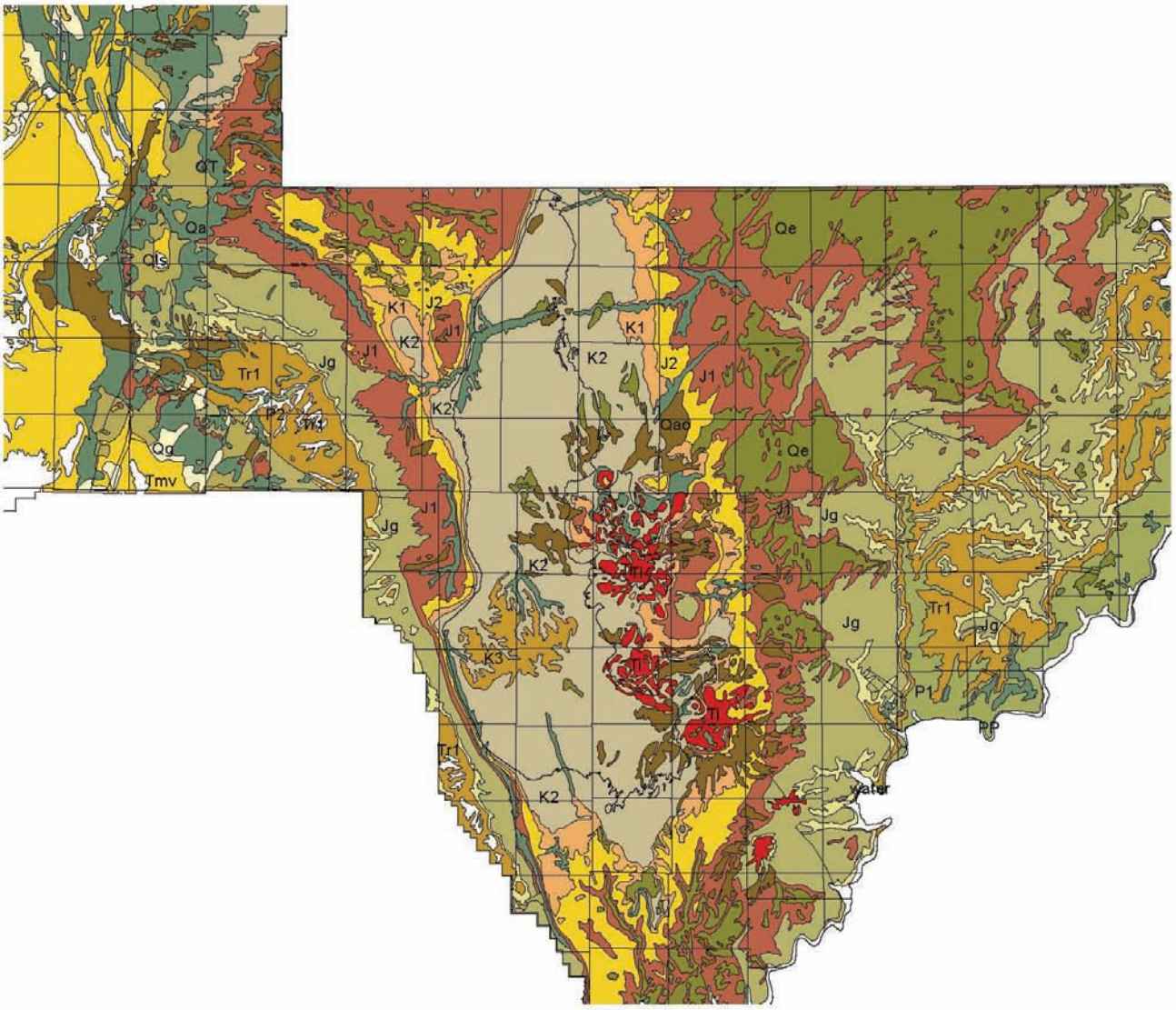
N
W E
S

Henry Mountains Coal Field

Physiographic provinces (caps) and subdivision in the vicinity of the coal field

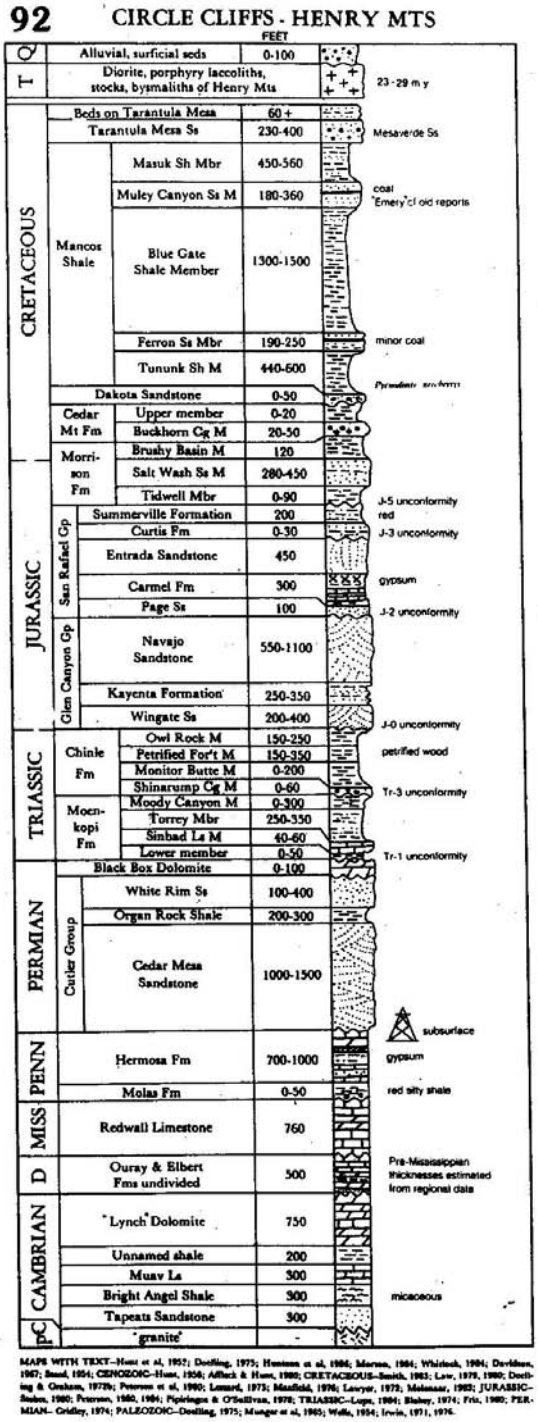
Source: BLM GIS Data Base, Stokes (1986), and Tabet (2000)

Figure 5: Regional Geologic Map



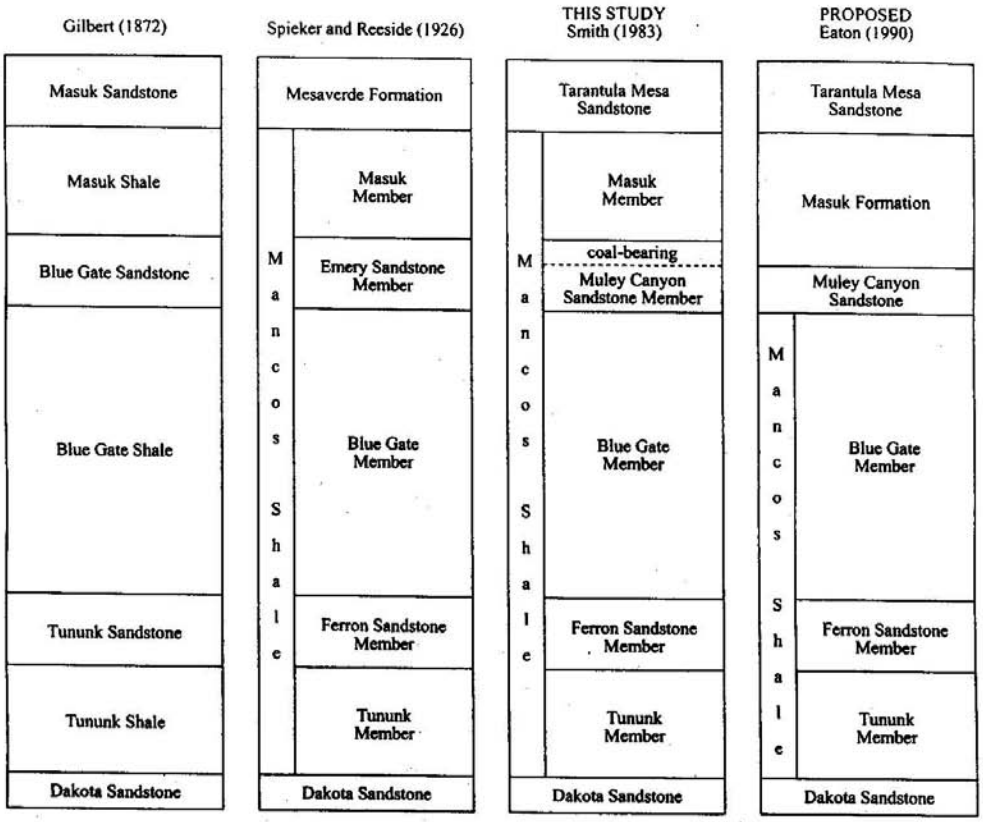
Source: BLM GIS Data Base, including Hintze (1980) and Tabet (2000)

Figure 6: Regional Stratigraphic Section (Hintze, 1988)



MAPS WITH TEXT–Hintze et al, 1957; Doelling, 1975; Hansman et al, 1986; Morton, 1986; Whitlock, 1986; Davidson, 1967; Baars, 1954; CENOZOIC–Hunt, 1956; Affleck & Hunt, 1980; CRETACEOUS–Smith, 1963; Law, 1978, 1980; Doelling & Graham, 1978b; Peterson et al, 1980; Lessard, 1973; Mansfield, 1976; Lawyer, 1978; Molenaar, 1985; JURASSIC–Stokes, 1980; Peterson, 1980, 1986; Pipiringos & O'Sullivan, 1978; TRIASSIC–Lupe, 1986; Blakey, 1974; Fris, 1980; PERMIAN– Gridley, 1974; PALEOZOIC–Doelling, 1975; Munger et al, 1965; Wells, 1954; Irwin, 1971, 1976.

Figure 7: Upper Cretaceous Stratigraphic Nomenclature



From Tabet (2000). This Study refers to Tabet (2000) and is the nomenclature used in this report as well.

Figure 8: Ferron Coal Zone

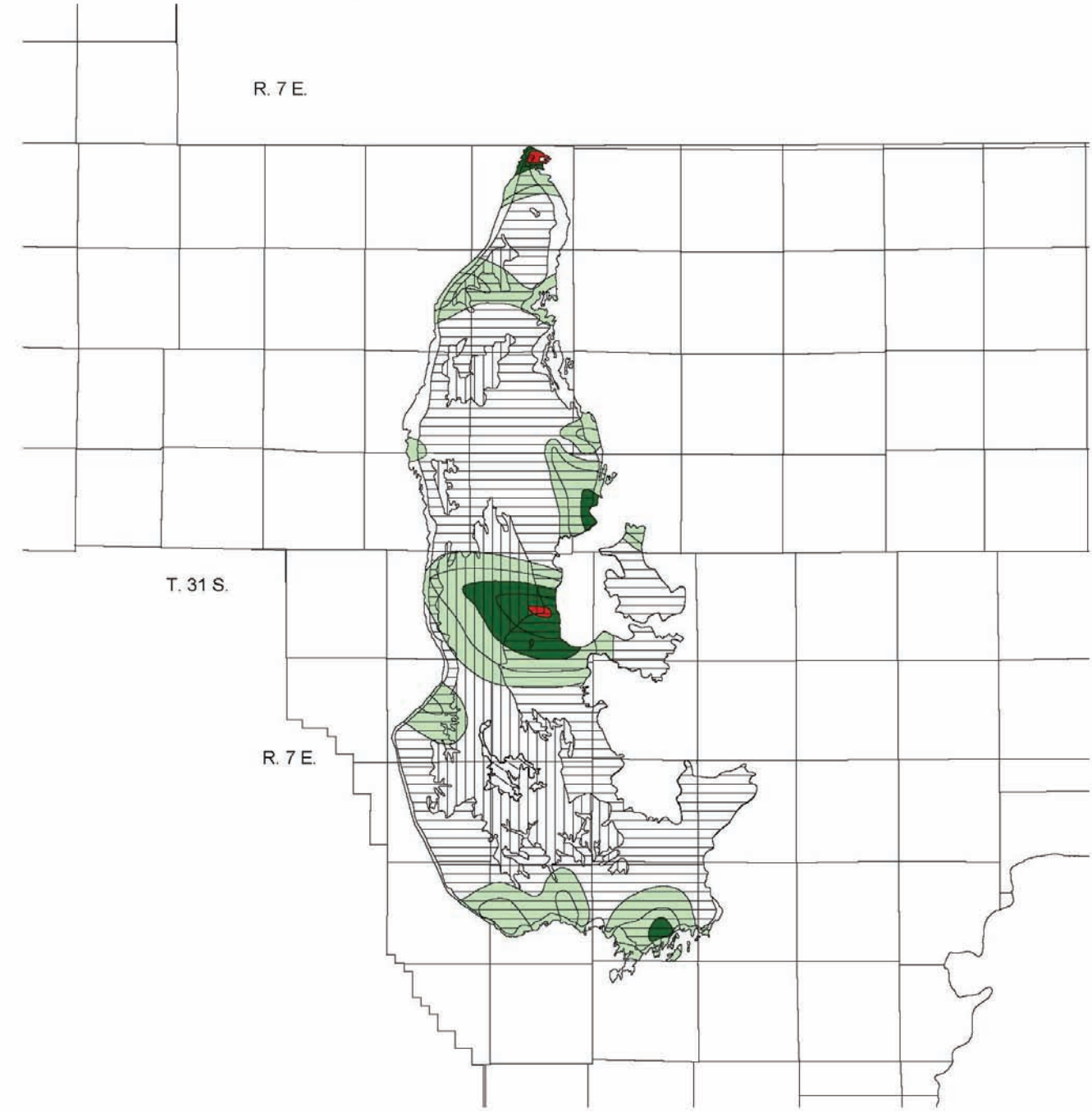
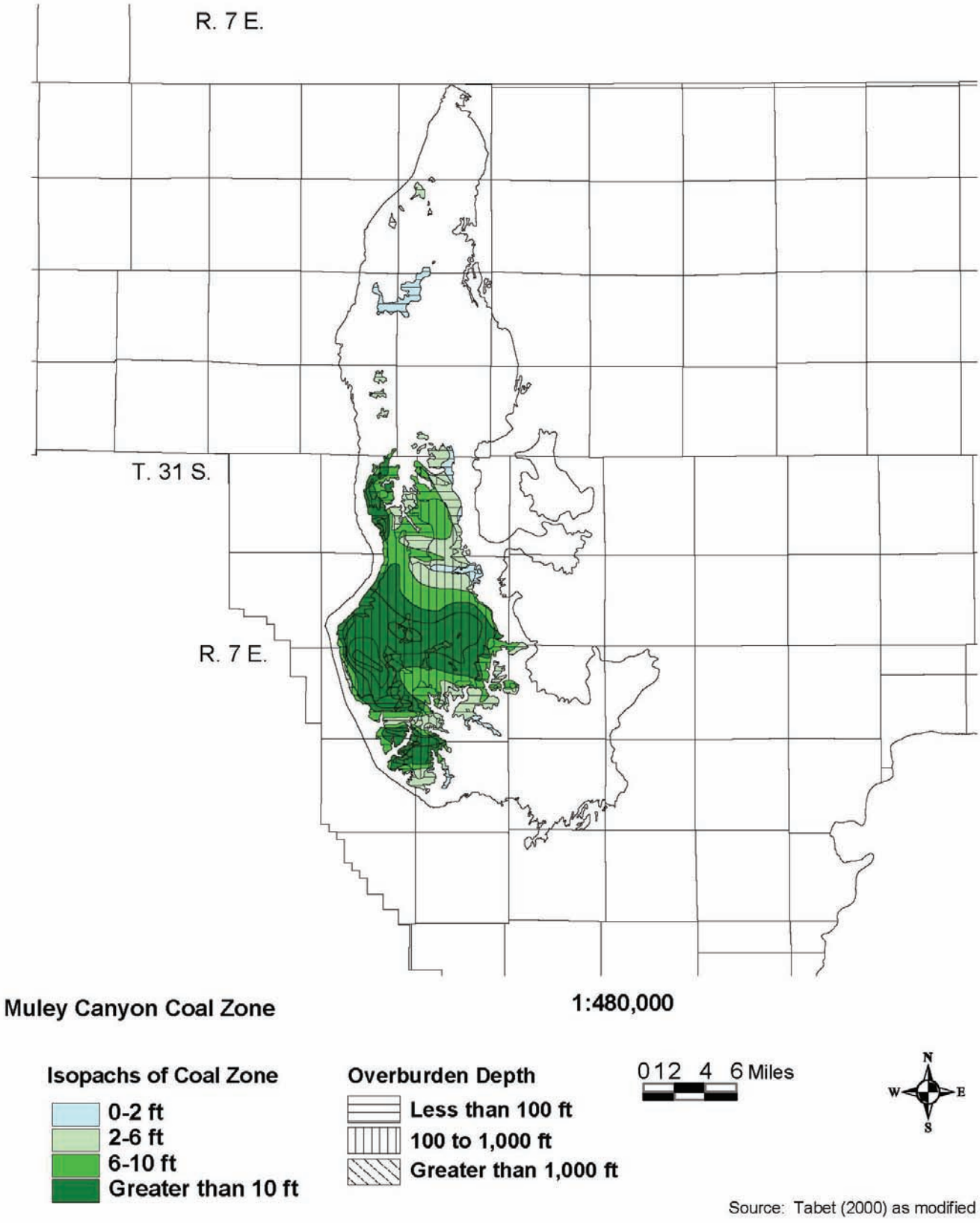


Figure 9: Muley Canyon Coal Zone



Source: Tabet (2000) as modified

COAL RESOURCES OF THE BLM RICHFIELD

PLANNING AREA

EXECUTIVE SUMMARY

All or parts of three coal fields occur within the Richfield planning area: the Wasatch Plateau, Emery, and Henry Mountains coal fields. More than 290 million tons of unleased, recoverable coal remains in the southern Wasatch Plateau coal field, and these resources have the highest development potential. From 2003 through 2017, the coal immediately around the Southern Utah Fuel Company (SUFCO) mine will likely be developed to extend the life of that operation. In the 15 years beyond 2017, other minable resources near the SUFCO mine will also likely be mined to further sustain that operation. Additional coal resources in the southern Wasatch Plateau coal field that could support new mines in the next 30 years occur in the area west of the SUFCO mine once called the Skumpah Canyon tract, the area to the west of the Joes Valley graben around Ferron Canyon, and the area a few miles north of Interstate 70 under the Old Woman Plateau.

The area with the second highest development potential is the Sevier County portion of the Emery coal field, where 190 million tons of recoverable coal resources have been identified. These resources will probably be developed after the Emery County portion of the Emery coal field resources are exhausted around 2030.

Attractive, but more remote coal resources occur in the Henry Mountains coal field, where 130 million tons of recoverable coal resources have been identified. These resources will probably become more important as the resources in the Book Cliffs, Wasatch Plateau, and Emery coal fields are approaching exhaustion— possibly starting by 2030.

INTRODUCTION

Background

To assist the U.S. Bureau of Land Management (BLM) in updating its management plan for the Richfield area, which covers all or parts of Garfield, Piute, Sanpete, Sevier, and Wayne counties in Utah, the Utah Geological Survey (UGS) was asked to generate information on the unleased, recoverable coal resources in the area and provide a reasonably foreseeable development scenario for those resources. The UGS used location and thickness data from its geographic informational system (GIS), information on previously mined areas, fault locations, and natural and cultural features that might inhibit future mining that had been compiled for coal availability studies of the Emery and Wasatch Plateau coal fields with funding from the U.S Geological Survey (USGS), to examine those fields. The analysis of the coal resources for the Henry Mountains coal field was modified from an earlier resource study by the UGS (Tabet 1999); rather than generating coal thickness maps by gridding and contouring via computer, hand-drawn coal isopach maps were digitized to provide thickness data for the new estimate of available coal in the Henry Mountains coal field. BLM mining engineers provided the engineering guidance used by the UGS for its evaluation to derive the coal resources that would be economical to mine under current and reasonably foreseeable market conditions.

Study Methods

This study was undertaken using ArcView™ software (version 3.2, Environmental Systems Research Institute [ESRI]) with ESRI's Spatial Analyst™ software extension running on a personal computer with

a Windows 98™, or higher, operating system. This GIS software allows for the simultaneous analysis of various combinations of resource parameters and the ability to easily repeat an analysis using different assumptions and parameters. Specific details related to the current GIS methodology employed follow.

Calculation of coal resources requires the determination of three parameters: the extent of minable coal in each bed (area), the distribution of the bed thickness in that area, and an estimate of the density of the coal. Maps showing the extent and thickness of identified coal beds were constructed from scattered points of observation (drill hole records and outcrop measurements), or digitized from existing hand drawn coal isopach maps. ESRI's Spatial Analyst software extension allows the choice of different mathematical methods to interpolate between, and extrapolate beyond, point data to construct coal thickness maps of various individual coal beds. An inverse distance weighting method (set to examine the six nearest neighbors and using a fourth-order, distance-weighting function) was selected to assign thickness values to individual 30-meter by 30-meter cells in a grid covering the areal extent of the coal formations in the study area. To define the remaining coal resources, the coal thickness information was combined with information on past mining, current leases, faulting, depth of cover, and other technical and cultural features that would potentially limit future mining.

Using these various individual coal bed thickness maps, polygonal areas were outlined to define the coal that would likely be economical to mine in the future. These polygonal areas generally had to contain coal thicker than 6 feet, cover greater than 100 feet and less than 2,500 feet, and contain resources that could be classified in the USGS's "demonstrated" resource reliability category (Wood et al., 1983) for at least 80% of the resource area. The resulting grids of the areas likely to be mined were converted from a floating-point (decimal) format to integer values. For example, all cells with coal bed thickness values greater than 6 but less than 8 feet were reclassified to the integer 7; for resource calculations, these cells were assigned a thickness of 7 feet of coal. This approximation significantly reduces the size of the resulting data sets and allows subsequent analyses to be undertaken in a reasonable amount of computation time (minutes rather than hours). Classification of coal bed thickness as integer data also allows convenient tabulation in ArcView™ of the areal extent of these thickness intervals; tables containing these data were exported to a spreadsheet for final calculation of the total tons of coal in each thickness interval. The coal resource calculations were accomplished by applying the USGS standard coal density factor for bituminous coal of 1,800 tons of coal per acre-foot (Wood, et al. 1983).

For the resource areas identified for future mining in the Wasatch Plateau coal fields, BLM mining engineers provided the recovery factor to apply to the identified resources to determine the recoverable resources; slightly lower recovery factors were applied to the Emery and Henry Mountains fields because less is known about mining conditions there. In general, coal in tracts suitable for surface mining were assigned an 80% recovery factor, those suitable for longwall mining were assigned a 60 to 70% recovery factor, and tracts suitable for extraction with continuous miners were assigned a 50% recovery factor. Only general information is available at this time regarding the quality of the coal and the roof and floor conditions in the various delineated minable tracts. Specific information about the quality of the coal and roof and floor conditions in the various tracts would help identify areas with quality problems or difficult mining conditions that might further restrict the recoverable coal in the tracts delineated. Some attempt to account for these factors was made in applying slightly different recovery factors to some tracts. Detailed mine planning and study of the economic aspects of extracting and marketing the resources identified is warranted to actually classify them as reserves; however, this study identifies the maximum area likely to be of interest for coal development in the next 30 years and gives an idea of the magnitude of recoverable resources remaining.

Point Data Preparation

Point data used in this study originate from a database compiled by the UGS over the past 20 years for the National Coal Resources Data System (NCRDS), which is a state cooperative program funded in part by the USGS. This database includes information from both unpublished and published sources. The BLM provided additional records as part of a cooperative data sharing agreement.

Keypunched NCRDS files in ASCII format, as well as BLM files in dBase format, were imported into a spreadsheet for simplification as a table of X, Y, Z data (easting, northing, and thickness or elevation) for each coal bed and exported as dBase (*.dbf) files for use in the ArcView™ GIS program. All data records were reexamined to verify correlations and spatial accuracy. Where necessary, spatial coordinates were converted to the Universal Transverse Mercator zone 12 coordinate system, and bed identifications were revised or assigned. Bed thickness is recorded to the nearest tenth of a foot. Elevation (mean sea level) and spatial coordinates are uniformly recorded to the nearest tenth of a meter. However, the overall precision of the elevation and spatial data is probably closer to tens (rather than tenths) of meters; varied sources and vintages of the data hinder more exacting precision estimates.

Data from thousands of point locations were examined for possible use, and only the most reliable data records were selected. Drill hole data were preferentially selected because they provide the most reliable coal bed thickness, depth, and location values. Measured section data were selected in areas where drill hole data were lacking; such data indicate minimum coal thickness because coal beds in Utah commonly thin at the outcrop as a result of weathering, slumping, or burning (Doelling 1968). Furthermore, the precise elevation of coal beds in the measured sections was often difficult to determine. Accordingly, where it was judged an elevation record for a measured section record was unreliable, the record was not used to construct a coal bed elevation map. The selected point data were used to prepare coal bed elevation, interburden, and thickness maps.

Setting

Garfield, Piute, Sanpete, Sevier, and Wayne counties include all or part of 3 of the state's 22 coal fields: the Emery, Henry Mountains, and the southern part of the Wasatch Plateau coal fields. These three coal fields together originally contained a resource estimated at more than 12.8 billion tons of minable coal (see Table A8-4), and were estimated by Doelling (1972a, b) to make up about one-third of the state's coal resources. As of 2003, mining occurs only in the Book Cliffs, Emery, and Wasatch Plateau coal fields.

Table A8-4 shows selected Utah coal fields with original minable resources in billions of tons. (coal beds < 3,000 feet deep and > 4 feet thick; from Doelling 1972a, Anderson 1983, Tabet 1999)

Table A8-4. Selected Utah Coal Fields With Original Minable Resources in Billions of Tons.

Coal Field	Identified Resources	Hypothetical Resources	Grand Total
Alton	1.870	0.279	2.149
Book Cliffs	3.527	0.157	3.684
*Emery	1.430	0.635	2.065
*Henry Mountains	0.543	0.000	0.543
Kaiparowits Plateau	7.878	7.320	15.198

Coal Field	Identified Resources	Hypothetical Resources	Grand Total
Kolob	2.014	0.000	2.014
*Wasatch Plateau	6.379	3.888	10.267
TOTAL	**23.641**	**12.279**	**35.920**

* Field has resources in the Richfield Resource Area

The Emery, Henry Mountains, and Wasatch Plateau coal fields have numerous thick coal zones, some in excess of 15 feet thick. However, most of the coal zones are lenticular and commonly split into several thinner beds and then disappear over a distance of a few miles. The lenticular nature of the coal, the non-uniformity of floor and roof strata over even small areas, the intertonguing stratigraphic relations of the coal-bearing rocks, and faulting make correlation of individual coal beds difficult. The average thickness of the coal beds included in the resource estimates given above is slightly more than 6 feet. At present, nearly all Utah coal operations are mining beds thicker than 6 feet. The coal beds of the Richfield District planning area occur in Upper Cretaceous strata; those of the Henry Mountains coal field occur in both the Ferron Sandstone Member of the Mancos Shale and the Muley Canyon Sandstone; the Wasatch Plateau coals occur in the Blackhawk Formation; and the coals of the Emery coal field are found in the Ferron Sandstone Member of the Mancos Shale.

The heat content of the Richfield planning area's bituminous coal is high compared with that of the sub-bituminous coals typically produced in Montana, New Mexico, and Wyoming. Typical as-received heat contents range from 10,000 to 12,700 British thermal units (Btu) per pound of coal. Sulfur content is usually low (< 1 weight percent) in the coal fields of the planning area, but there are some areas with medium to high (1 to 3 weight percent) sulfur, particularly in the Emery and Henry Mountains coal fields. Near-surface coal quality is commonly degraded by oxidation and it may be burned for a considerable distance from the outcrop.

KNOWN OCCURRENCES AND CHARACTERISTICS

Henry Mountains Coal Field

Setting

The remote Henry Mountains coal field occurs in an area of scenic beauty. The striking Waterpocket Fold to the west has been set aside, in part, as Capitol Reef National Park, while to the south and southeast are parts of Glen Canyon National Recreation Area (NRA). BLM administers the majority of the coal-bearing lands in the coal field. The Henry Mountains coal field area has few paved roads and no railroads. State Highway 24 crosses the northern part of the coal field and is the only paved road in the area. State Routes 95 and 276 run parallel to and 10 miles east of the eastern margin of the coal field. Access to most parts of the coal field is limited to dirt roads. The nearest rail line is the Union Pacific line at Green River about 60 miles to the north. The remote, relatively roadless nature of the Henry Mountains coal field area led the BLM in 1990 to delineate three proposed wilderness areas covering parts of the coal field. The wilderness alternatives proposed by the Utah State Office of the BLM in 1990 for portions of the three Wilderness Study Areas (WSAs) in the Henry Mountains coal field constrain potential development of the coal resources of only a few sections of land, leaving the majority of the area open for future development. Although the BLM (1999) conducted a re-inventory of Utah lands for wilderness that substantially increased the areas in the Henry Mountains coal field considered to have wilderness

potential, those lands have been withdrawn from wilderness protection as the result of settlement of a lawsuit brought by the State of Utah against the U.S. Department of the Interior (DOI).

Elevations in the area of the Henry Mountains coal field range from about 4,600 feet at the far northern end of the field to more than 11,000 feet in the central Henry Mountains. The topography varies from steep, rugged terrain in the Henry Mountains on the east, to a series of dissected mesas and buttes in the central part of the coal field, to cuestas and hogback ridges along the western margin of the coal field.

The principal Cretaceous coal-bearing strata of the Henry Mountains coal field cover parts of central Wayne and Garfield counties. Cretaceous strata are preserved in a structural basin, the Henry Mountains syncline, which is bounded on the west by the monocline of the Waterpocket Fold, and on the east by the Monument upwarp. This north–south elongated basin extends about 50 miles along its axis and is 2 to 18 miles wide.

Along the Waterpocket Fold on the west, the Cretaceous strata have an average inclination of 25 to 30 degrees to the east (Doelling 1972b). Within the center of the basin the strata are nearly horizontal, while the strata on the eastern flank of the basin generally dip gently to the west at less than 10 degrees, except near the Henry Mountains intrusive bodies, where they may be steeply folded and faulted. The only significant faulting unrelated to the intrusive bodies of the Henry Mountains is at the far northern end of the basin near Factory Butte, where a series of east–west trending normal faults with displacements of less than 30 feet have been mapped (Doelling 1972b).

Coal Geology

A small amount of unminable coal occurs in the Dakota Sandstone, and minable quantities occur in the Ferron Sandstone Member of the Mancos Shale and Muley Canyon Formation. The unminable coal in the Dakota Sandstone extends into a very small portion of south central Emery County. The Dakota coals are very thin and discontinuous and are an insignificant resource. The coals of the Ferron are locally thick, but not very continuous, and have limited potentially minable resources. Muley Canyon coals are the thickest, most continuous, and have the largest potentially minable resource (Doelling 1972b).

Ferron Coals—the coals in the Ferron Sandstone Member of the Mancos Shale occur in the upper nonmarine strata, in a 50-foot-thick zone immediately above the lower marine part of the Ferron. The coal interval contains one to five beds that have an aggregate thickness ranging from zero to 16.5 feet. Coal beds seldom exceed 4 feet in thickness and commonly average 1 to 3 feet thick.

The areal distribution of coal is patchy, with isolated, east-west elongated pods found in three separate locations across the Henry Mountains basin. The pods are approximately 1 to 5 miles wide and from 3 to 10 miles long. Although the coal thickness data are primarily from the margins of the coal field, it appears that the coal is best developed in three widely separated areas in the northern, central, and southern parts of the field. The coal estimates in the central area are more speculative than the other two because they rely heavily on data from a single, deep petroleum well. The Ferron coal in the northern area near Factory Butte is the thickest and occurs under cover of less than 200 feet of overburden over an area of a few square miles.

Because the depositional environment for the Ferron in the Henry Mountains basin has been interpreted as a fluvial-deltaic complex (Uresk 1979, Hill 1982), the east–west elongate coal pods might reflect interfluvial swamps formed on eastward prograding fluvial-deltaic lobes that formed in the northern, central, and southern parts of the basin. However, the original distribution of coal near the top of the Ferron might have been altered by erosion prior to the deposition of the overlying Blue Gate Member, leaving a coal bearing unit of variable thickness.

The coal in the Ferron Sandstone generally occurs in its upper portion, but in many places throughout the field no is coal present. Therefore, the top of the Ferron was mapped because it approximated the depth to the coal zone throughout the whole coal field. The top of the Ferron is exposed around the margins of the Henry Mountains basin, and it reaches a maximum depth of slightly more than 2,000 feet under a several-square-mile area beneath the highest portions of Tarantula Mesa in the central part of the basin. Thus, all the Ferron coal deposits of the Henry Mountains coal field, where thick enough to mine, occur at potentially minable depths.

Muley Canyon Coals—The upper part of the Muley Canyon Sandstone is a nonmarine coal-bearing interval, which ranges from 92 to 209 feet thick and averages about 150 feet thick. This stratigraphic interval is considered the Muley Canyon coal zone in this report. Coal in this zone commonly occurs in 3 to 4 beds, but as many as 10 coal beds can be found locally. Individual coal beds range from zero to 13.4 feet thick but are commonly 2 to 5 feet thick. The aggregate thickness of all the coal beds in the Muley Canyon zone ranges from zero to 27.5 feet. Most of area underlain by this zone has at least 5 feet of total coal, and about half of the area has 10 feet or more of total coal.

Unlike the Ferron, coal occurs throughout the area underlain by the Muley Canyon Sandstone. The Muley Canyon coals are thickest in elongate pods oriented in an east–west direction that tend to be thicker on the west side of the basin and that thin gradually to the east (Tabet 1999). The largest thick pod of coal lies in the center of the basin, as was the case with the Ferron coals.

Potentially surface-minable coal is found under broad areas at the northern and southern ends of the Muley Canyon coal zone's extent, where less than 100 feet of cover is common (Tabet 1999). The extensive, thick Muley Canyon coal under Tarantula Mesa reaches a maximum depth of slightly more than 1,000 feet, and therefore is extractable via underground mining methods at shallow to moderate depths.

Coal Quality

Chemistry of the Ferron Coals—The analytical data provided here comes from a UGS coal quality database, now in digital form, much of which was originally complied by Doelling (1972a). Only four coal sample analyses from the Ferron have been published for the Henry Mountains coal field (see Table A8-5). These coals have an apparent rank of high-volatile C bituminous. The four samples are from the northern (three samples) and southern (one sample) edges of the field. The mean values for the sample analyses indicate the coals are high in ash (14.5%) and sulfur (2.5%) contents.

Table A8-5. Proximate Analyses of Ferron Coal Samples from the Henry Mountains Basin

Cadastral Location	Moisture (%)	Volatile Matter (%)	Fixed Carbon (%)	Ash (%)	Sulfur (%)	Btu per Pound (%)
02-27S-09E	8.3	34.1	43.8	13.8	1.6	10,650
11-27S-09E	4.9	33.5	48.7	12.9	2.6	10,920
11-27S-09E	5.5	33.6	44.9	16.0	2.5	10,840
36-34S-10E	4.6	38.1	42.2	15.1	3.2	11,743
Mean	**5.8**	**34.8**	**44.9**	**14.5**	**2.5**	**11,038**
Minimum	**4.6**	**33.5**	**42.2**	**12.9**	**1.6**	**10,650**
Maximum	**8.3**	**38.1**	**48.7**	**16.0**	**3.2**	**11,743**

Cadastral Location	Moisture (%)	Volatile Matter (%)	Fixed Carbon (%)	Ash (%)	Sulfur (%)	Btu per Pound (%)
STD.DEV.	**1.7**	**2.2**	**2.8**	**1.4**	**0.7**	**483**

Chemistry of the Muley Canyon Coals—The coal beds in the Muley Canyon have been more extensively sampled than those in the Ferron, but the samples are not uniformly distributed over the whole area underlain by these coals. The samples come primarily from the northern and southern ends of the field (from areas with shallow cover) and not as many are from the deeper central portion of the field. The Muley Canyon analyses come from 3 shallow prospects and 29 drill cores (see Table A8-6).

The Muley Canyon coal has an apparent rank of sub-bituminous A to high-volatile bituminous C (Hatch, et al. 1979, Law 1980). This slightly lower rank than the Ferron coals translates to a lower heat content and higher moisture content for the Muley Canyon coals.

The mean ash content of the Muley Canyon coals, at 12.1%, is less than that of the Ferron coals, but is higher than the coals produced from the Wasatch Plateau and Book Cliffs coal fields, which typically have an average ash content of about 10%. The ash content of the Muley Canyon coals varies across the coal field, and is highest in two east–west trending lobate-shaped areas—one each in the northern and southern parts of the field.

The sulfur content of the Muley Canyon coals can range as high as 3.2% (see Table A8-6), which is as high as the Ferron coals, but the mean sulfur content of the Muley Canyon samples is considerably less at 0.94%. In comparison, the sulfur content of coal presently produced from the Wasatch Plateau and Book Cliffs coal fields ranges from 0.5 to 1.0%. The sulfur content of the Muley Canyon coals across the coal field is highest in one east–west trending area that occurs in the same area as the northern high-ash area (Tabet 1999).

Table A8-6. Proximate Analyses of Muley Canyon Coal Core and Prospect Samples

Cadastral Location	Moisture (%)	Volatile Matter (%)	Fixed Carbon (%)	Ash (%)	Sulfur (%)	Btu per Pound (%)
22-31S-8E	11.5	35.3	40.3	12.9	0.8	10,110
22-31S-8E	11.0	35.4	37.0	16.6	0.4	9,440
22-31S-8E	9.5	32.7	33.3	24.5	2.0	8,510
23-31S-8E	11.6	36.6	42.7	9.1	0.6	10,620
23-31S-8E	10.3	36.0	36.3	17.4	0.7	9,400
23-31S-8E	10.9	38.2	42.4	8.5	1.0	10,790
36-31S-8E	13.51	31.99	35.69	18.81	0.53	9,015
36-31S-8E	13.87	34.37	41.33	10.43	1.0	10,204
07-31S-9E	13.1	34.0	45.1	7.8	0.7	10,210
17-31S-9E	13.0	35.0	37.7	14.3	0.7	9,670
18-31S-9E	12.5	33.6	35.7	18.2	0.7	9,300
18-31S-9E	12.7	32.2	32.0	23.1	3.2	8,520
19-31S-9E	12.5	34.6	39.3	13.6	0.5	9,990

Cadastral Location	Moisture (%)	Volatile Matter (%)	Fixed Carbon (%)	Ash (%)	Sulfur (%)	Btu per Pound (%)
19-31S-9E	13.7	36.5	42.7	7.1	0.6	10,600
20-31S-9E	11.6	35.4	36.3	16.7	2.8	9,610
20-31S-9E	12.1	37.1	41.4	9.4	0.4	10,660
30-31S-9E	10.9	36.5	45.9	6.8	0.8	10,700
30-31S-9E	11.5	38.5	40.8	7.7	1.5	12,491
05-32S-9E	13.6	32.56	39.3	14.54	0.8	9,597
05-32S-9E	13.6	35.25	36.19	14.96	0.69	9,652
12-33S-8E	14.7	27.4	30.6	27.3	0.4	7,710
24-33S-8E	14.37	35.57	35.14	16.92	0.99	9,156
24-33S-8E	14.37	34.92	42.47	8.24	1.16	10,231
24-33S-8E	14.37	35.61	45.48	4.54	1.09	10,759
02-33S-9E	10.48	38.29	45.25	5.98	0.78	11,468
11-33S-9E	11.34	36.09	43.86	8.71	0.46	10,856
11-33S-9E	13.7	37.2	44.19	4.91	0.47	11,121
14-33S-9E	12.29	36.65	45.49	5.57	0.55	11,147
22-33S-9E	13.3	36.23	39.33	11.14	1.05	8,178
23-33S-9E	13.48	34.45	43.61	8.46	0.83	10,660
23-33S-9E	13.3	36.36	43.36	5.97	0.67	11,010
23-33S-9E	14.28	34.89	43.51	7.32	1.12	10,718
Mean	**12.1**	**35.2**	**40.1**	**12.1**	**0.94**	**10,067**
Minimum	**9.5**	**27.4**	**30.6**	**4.54**	**0.40**	**7,710**
Maximum	**14.7**	**38.5**	**45.9**	**27.3**	**3.20**	**12,491**
STD. DEV.	**1.4**	**2.2**	**4.3**	**6.0**	**0.64**	**1,030**
(Statistics for 28 samples with less than 20% ash)						
Mean	**12.6**	**35.6**	**41.0**	**10.8**	**0.84**	**10,255**
Minimum	**10.3**	**31.99**	**35.14**	**4.54**	**0.46**	**8,178**
Maximum	**14.4**	**38.5**	**45.9**	**18.81**	**2.8**	**12,491**
STD. DEV.	**1.3**	**1.5**	**3.5**	**4.5**	**0.46**	**876**

The heat content of Muley Canyon coals ranges from 7,710 to 12,491 Btu per pound and averages 10,067 Btu per pound (see Table A8-6). The average heat content of these coals is considerably below the 11,400 to 12,000 Btu/lb range currently produced at mines in Carbon and Emery counties. The heat content distribution across the coal field consists of east–west trends with low heat areas corresponding directly with areas having high-ash contents (Tabet 1999). In addition to the primary east–west trend of the heat content values, the heat content of the Muley Canyon coals appears to be slightly higher on the eastern side of the field than on the west, suggesting that the coals on the eastern side of the field were possibly thermally upgraded by the intrusion of the Henry Mountains laccoliths.

The ash chemistry of some of the Muley Canyon coals has also been analyzed (Hatch, et al. 1979). This allows for an evaluation of the boiler slagging and fouling characteristics of these coals. Table A8-7 gives the analyzed values of the major oxides in the coal ash that can be used to predict coal utilization characteristics.

The physical and chemical transformations that the minerals in the coal ash undergo during combustion are complex processes. Vaninetti and Busch (1981) define slagging as the buildup of molten ash materials within the lower furnace section of a boiler, and fouling as the accumulation of sintered ash in the convective passes section of a boiler. Both of these problems reduce boiler efficiency, increase operating costs, and shorten boiler life. Various indices can predict the combustion characteristics of coal ash, and two of them are presented in

Table A8-8. The first step in analyzing ash combustion properties is to determine the type of coal ash present. Coal ash is characterized as either lignitic or bituminous, depending on the value determined by summing CaO and MgO values, and dividing the result by the Fe2O3 value. Coal ash is termed lignitic when the resulting value of this calculation is greater than 1.0, and bituminous when the value is less than 1.0. Most of the Muley Canyon ash analyses fall in the lignitic ash category, although two ash samples fall in the bituminous ash category. Both of these bituminous ash analyses come from coal samples with high iron and sulfur contents, indicating high pyrite content.

Table A8-7. Major Oxide Composition of the Ash (in Percent) From 13 Muley Canyon Coal Samples From the Henry Mountains Coal Field

Cadastral Location	Acidic Oxides			Basic Oxides					Ash
	SiO2	Al2O3	TiO2	CaO	MgO	Na2O	K2O	Fe2O3	
22-31S-8E	60.0	12.0	1.00	8.9	2.00	0.75	0.44	5.8	13.0
22-31S-8E	54.0	27.0	0.79	9.0	1.03	0.95	1.20	1.0	19.6
22-31S-8E	57.0	24.0	1.00	6.0	1.18	0.28	1.10	1.0	10.2
23-31S-8E	53.0	14.0	0.88	13.0	2.09	2.75	0.43	3.5	9.8
23-31S-8E	51.0	23.0	0.88	14.0	1.27	1.09	0.66	1.9	20.0
23-31S-8E	38.0	22.0	1.20	16.0	2.53	1.62	0.31	4.9	9.1
17-31S-9E	58.0	17.0	0.87	10.0	1.96	0.13	0.73	3.3	14.5
18-31S-9E	61.0	17.0	1.00	6.2	1.58	0.54	1.20	2.5	19.7
18-31S-9E	50.0	12.0	0.70	6.5	1.49	0.92	1.20	17.0	19.6
19-31S-9E	65.0	14.0	1.00	8.4	1.76	0.51	0.62	2.5	15.6
19-31S-9E	30.0	11.0	0.60	29.0	2.80	1.30	0.48	4.4	8.3
20-31S-9E	65.0	7.8	1.20	12.0	2.31	0.24	0.54	3.1	10.8
20-31S-9E	46.0	18.0	1.10	7.5	1.36	0.40	0.74	15.0	18.3
Mean	**52.9**	**16.8**	**0.94**	**11.3**	**1.80**	**0.88**	**0.74**	**5.5**	**14.5**
Minimum	**30.0**	**7.8**	**0.60**	**6.0**	**1.03**	**0.13**	**0.31**	**1.0**	**8.3**
Maximum	**65.0**	**27.0**	**1.20**	**29.0**	**2.80**	**2.75**	**1.20**	**17.0**	**20.0**
STD. DEV.	**10.2**	**5.8**	**0.18**	**6.2**	**0.54**	**0.71**	**0.32**	**4.9**	**4.6**

Table A8-8. Ash Type, Fouling, and Slagging Evaluation of the Oxide Composition of Muley Canyon Coal Ash

Cadastral Location	Ash Type (CaO+MgO/Fe2O3)	Fouling Severity (Percent Na2O)	Slagging Severity (Base/Acid ratio*)
22-31S-8E	1.88(lignitic)	0.75(low)	0.245(low)
22-31S-8E	10.03(lignitic)	0.95(low)	0.161(low)
22-31S-8E	1.14(lignitic)	0.28(low)	0.181(low)
23-31S-8E	4.31(lignitic)	2.75(low)	0.320(med-severe)
23-31S-8E	8.04(lignitic)	1.09(low)	0.253(med-severe)
23-31S-8E	3.78(lignitic)	1.62(low)	0.414(med-severe)
17-31S-9E	3.62(lignitic)	0.13(low)	0.212(low)
18-31S-9E	3.11(lignitic)	0.54(low)	0.152(low)
18-31S-9E	0.47(bituminous)	0.92(medium)	0.432(low)
19-31S-9E	4.06(lignitic)	0.51(low)	0.172(low)
19-31S-9E	7.23(lignitic)	1.30(low)	0.913(low)
20-31S-9E	4.62(lignitic)	0.24(low)	0.246(low)
20-31S-9E	0.59(bituminous)	0.40(low)	0.384(low)
Mean	**4.07(lignitic)**	**0.88(low)**	**0.314(med-severe)**

* Base/Acid Ratio = CaO+MgO+Na2O+K2O+Fe2O3/SiO2+Al2O3+TiO2

Sodium content in the ash is critical to various indices of ash-fouling potential; the simplest indicator of fouling is the total sodium oxide content of the ash alone. Bituminous and lignitic ash coals respond differently to increased sodium oxide content. Coals in the bituminous category are much more sensitive to small increases in sodium oxide. The change in ash-fouling tendency with increasing sodium oxide content, according to Vaninetti and Busch (1981), is illustrated in Table A8-9.

Table A8-9. Fouling Tendency

Factor	Ash Type	Low	Medium	High	Severe
Na2O% in ash	bituminous	<0.5	0.5–1.0	1.0-2.5	>2.5
Na2O% in ash	lignitic	<3.0	3.0–5.0	>5.0	

When examining just the sodium content of the ash, all but one of the Muley Canyon coal ash samples fall in the low-fouling potential range.

If coal from the Muley Canyon were mined, various quality control strategies including blending, selective mining, or selective washing could probably produce a low-ash, low-sulfur coal product similar to that presently produced in central Utah. The foregoing analysis of the ash chemistry predicts that most of the Muley Canyon coal produced would have low- to moderate-slagging and low-fouling boiler combustion properties, but detailed, site-specific sampling is needed for each area to be mined.

Coal Resources

Ferron Sandstone Member Resources—The Ferron Sandstone contains an estimated 683.5 million short tons of in-place coal resources. About three-quarters of the coal resources lie in Garfield County. Because of limited exploration data, only 27%, or 187.3 million tons, of the total resources fall into the demonstrated resource category (occurring within 0.75 miles of a thickness measurement point). The bulk of the coal resource, 67%, falls into the inferred resource category (occurring between 0.75 and 3 miles from a thickness measurement point). Only a few percent of the resources lie more than 3 miles from a thickness measurement point, or within the hypothetical category.

Eleven percent of Ferron Sandstone coal resources, or 75.1 million short tons, lie under 100 feet or less of cover. Most of the coal resources, 89%, have cover exceeding 100 feet. Although most of the coal is deeper than 100 feet, all the coal is less than 2,000 feet deep.

As mentioned above, the coal beds in the Ferron Sandstone are generally thin, and this is reflected by the fact that 68% of the resources fall into the 2- to- 6-foot thick resource category. Less than one-third of the coal resources have an aggregate thickness greater than 6 ft. The thickest coal occurs at the far northern extent of the Ferron Sandstone near Factory Butte.

In summary, the majority of the Ferron coal resources are poorly defined by USGS reliability standards, and are primarily less than 6 feet thick, deeper that 100 feet, and lie within Garfield County. The in-place coal resources for the Ferron zone are summarized by thickness, depth, and reliability categories, as well as by county, in Table A8-10,

Table A8-11, and

Table A8-12. Readers are cautioned that the individual resource categories in the tables may not sum to totals at the bottoms of the tables due to independent rounding.

Table A8-10. In-place Ferron Coal Zone Resources by Thickness and County

County	Thickness (ft)									Total
	2–6			6–10			10+			
	DEM1	INF2	HYP3	DEM	INF	HYP	DEM	INF	HYP	
Wayne	65.1	71.2	0.0	12.0	8.8	0.0	8.6	0.0	0.0	165.7
Garfield	74.8	224.6	28.8	19.1	153.0	9.8	7.7	0.0	0.0	517.8
Total	**139.9**	**295.8**	**28.8**	**31.1**	**161.8**	**9.8**	**16.3**	**0.0**	**0.0**	**683.5**

1 DEM = Demonstrated, 2 INF = Inferred, 3 HYP = Hypothetical
(coal beds > one foot thick; figures in millions of short tons).

Table A8-11. In-place Ferron Coal Zone Resources by Thickness and Depth of Cover

Depth (ft)	Thickness (ft)									Total
	2–6			6–10			10+			
	DEM1	INF2	HYP3	DEM	INF	HYP	DEM	INF	HYP	
0-100	54.2	5.1	0.0	6.7	2.2	0.0	6.9	0.0	0.0	75.1
100-1,000	81.3	187.4	12.8	20.0	84.4	0.0	5.5	0.0	0.0	391.3

Depth (ft)	Thickness (ft)									Total
	2–6			6–10			10+			
	DEM1	INF2	HYP3	DEM	INF	HYP	DEM	INF	HYP	
1-2,000	4.3	103.3	16.0	4.5	75.3	9.8	4.0	0.0	0.0	217.2
Total	**139.9**	**295.8**	**28.8**	**31.1**	**161.8**	**9.8**	**16.3**	**0.0**	**0.0**	**683.5**

1 DEM = Demonstrated, 2 INF = Inferred, 3 HYP = Hypothetical
(coal beds > one foot thick; figures in millions of short tons).

Table A8-12. In-place Ferron Coal Zone Resources by Thickness and Township Tier

Tier	Thickness (ft)									TOTAL
	2–6			6–10			10+			
	DEM1	INF2	HYP3	DEM	INF	HYP	DEM	INF	HYP	
T. 27 S.	13.3	4.4	0.0	7.6	0.0	0.0	8.6	0.0	0.0	33.9
T. 28 S.	19.8	28.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	48.2
T. 29 S.	13.2	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.6
T. 30 S.	18.8	35.0	0.0	4.4	8.8	0.0	0.0	0.0	0.0	67.0
T. 31 S.	13.8	102.4	15.4	12.4	149.1	9.8	7.7	0.0	0.0	310.6
T. 32 S.	11.2	44.8	13.5	0.0	0.0	0.0	0.0	0.0	0.0	69.5
T. 33 S.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
T. 34 S.	49.8	77.3	0.0	6.7	3.9	0.0	0.0	0.0	0.0	137.7
Total	**139.9**	**295.8**	**28.8**	**31.1**	**161.8**	**9.8**	**16.3**	**0.0**	**0.0**	**683.5**

1 DEM = Demonstrated, 2 INF = Inferred, 3 HYP = Hypothetical
(coal beds > one foot thick; figures in millions of short tons).

Muley Canyon Resources—The Muley Canyon Sandstone contains 1,526.1 million short tons of in-place coal resources. Because of fairly uniformly spaced exploration data, 62%, or 945.6 million tons, of the total coal resources fall into the demonstrated, or the most reliable, resource category. The remaining 38% of the coal resources, 580.5 million tons, fall into the inferred resource category, or those resources occurring at between 0.75 and 3 miles from a thickness measurement point. None of the coal resources fall into the hypothetical category (more than 3 miles from a thickness measurement point). There are ample minable coal resources in the Muley Canyon Sandstone, but only half of one percent occur within the Wayne County portion of the field.

Looking at the coal resources by depth of cover shows that 25.6%, or 391 million short tons, lie under 100 feet or less of cover. Most of the coal resources, 74.4%, are under more than 100 feet of overburden. Although most of the coal is deeper than 100 feet, all of the coal in the Muley Canyon zone is less than 1,500 feet deep, and most of the deep coal lies under less than 1,000 feet of overburden.

Ninety-one percent of the Muley Canyon resources have a total coal thickness of 6 feet or greater. In fact, about 70% of the coal resources have a total coal thickness of more than 10 feet. Under much of the area below Tarantula Mesa, the Muley Canyon coal zone consists primary of one 6 to 12 feet thick bed (Tabet 1999). Only 9% of the coal resources have a thickness of less than 6 feet.

In summary, the Muley Canyon coal resources are mostly well defined according to the USGS reliability standards, greater than 6 feet thick, deeper that 100 feet, and lie within Garfield County. The in-place coal resources for the total Muley Canyon coal zone are summarized by thickness, depth, reliability, and county categories in Table A8-13,

Table A8-14, and Table A8-15. Note that the individual resource categories in the tables below may not sum to totals at the bottoms of the tables due to independent rounding.

Table A8-13. Total Muley Canyon Coal Zone Resources by Thickness and Depth of Cover

Depth (ft)	Thickness (ft)						Total
	2–6		6–10		10+		
	DEM1	INF2	DEM	INF	DEM	INF	
0-100	78.3	4.4	107.4	7.6	172.4	20.9	391.0
100-1,000	42.1	11.3	118.5	75.7	383.7	449.4	1,080.7
1-2,000	1.6	0.0	4.9	1.2	36.8	9.9	54.4
Total	**121.9**	**15.8**	**230.9**	**84.5**	**592.8**	**480.2**	**1,526.1**

1 DEM = Demonstrated, 2 INF = Inferred.
(coal beds > one foot thick; figures in millions of short tons).

Table A8-14. Total Muley Canyon Coal Zone Resources by Thickness and County

County	Thickness (ft)						Total
	2–6		6–10		10+		
	DEM1	INF2	DEM	INF	DEM	INF	
Wayne	7.3	0.0	0.2	0.0	0.0	0.0	7.5
Garfield	114.6	15.8	230.7	84.5	592.8	480.2	1,518.6
TOTAL	**121.9**	**15.8**	**230.9**	**84.5**	**592.8**	**480.2**	**1,526.1**

1 DEM = Demonstrated, 2 INF = Inferred.
(coal beds > one foot thick; figures in millions of short tons).

Table A8-15. Total Muley Canyon Coal Zone Resources by Thickness and Township Tier

Tier	Thickness (ft)						Total
	2–6		6–10		10+		
	DEM1	INF2	DEM	INF	DEM	INF	
T. 30 S.	7.3	0.0	0.2	0.0	0.0	0.0	7.5
T. 31 S.	45.5	2.5	89.1	6.5	86.0	0.0	229.6
T. 32 S.	21.5	10.9	61.0	44.4	205.1	293.8	636.7
T. 33 S.	40.7	0.6	77.0	27.5	259.8	169.2	574.8
T. 34 S.	6.9	1.8	3.6	6.1	41.9	17.2	77.5
Total	**121.9**	**15.8**	**230.9**	**84.5**	**592.8**	**480.2**	**1,526.1**

Tier	Thickness (ft)						Total
	2–6		6–10		10+		
	DEM1	INF2	DEM	INF	DEM	INF	

1 DEM = Demonstrated, 2 INF = Inferred.
(coal beds > one foot thick; figures in millions of short tons).

Wasatch Plateau Coal Field

Setting

The Wasatch Plateau coal field extends southwest about 90 miles from western Carbon County, through western Emery County, and into eastern Sanpete and Sevier counties (Doelling and Smith 1982). The field, as defined by Doelling and Smith (1982), is 13 to 22 miles wide. The outcrop of the coal-bearing Blackhawk Formation forms the eastern edge of the field, and the western edge is bounded by a series of faults forming the Musinia graben near the western edge of the plateau in Sanpete and Sevier counties. Sanpete and Sevier counties contain roughly the southwestern half of the "larger" Wasatch Plateau coal field.

Only the northern third of the field is directly served by rail transportation. One spur leaves the main line of the Union Pacific Railroad at the town of Colton and heads 15 miles southwest to serve the mines near Scofield. Three other spurs branch off at the town of Helper, two running 5 miles west, and one running 20 miles south. The longest one, which runs south to the town of Hiawatha, formerly served the Plateau mine of RAG Coal Company. Rail shipment of coal production from the southern end of the field first requires a truck haul 55 miles westward to a loadout on a branch of the Union Pacific Railroad west of the town of Levan.

Coal Geology

Most of the coal in the Wasatch Plateau field is found in the lower third of the Blackhawk Formation. Eight individual beds have been identified that contain coal more than 6 feet thick. A greater number of thick beds occur in the northern portion of the field than in the southern portion. Major coal bed groups of the Wasatch Plateau include, in ascending order, the Hiawatha zone (consisting of the Knight, Acord Lakes, Axel Anderson, and Cottonwood beds), the Blind Canyon zone, the Wattis zone, the Gordon zone, the Castlegate A zone, and the Castlegate D zone. The thickness range of minable coal for the major zones of the southern part of the Wasatch Plateau field in Sanpete and Sevier counties can be found in Table A8-16.

Table A8-16. Thickness Range of Minable Coal for the Major Zones of the Southern Part of the Wasatch Plateau Field in Sanpete and Sevier Counties

Southern Wasatch Plateau beds	Thickness Range (ft)
Axel Anderson	6 to 15
Acord Lakes (Upper Hiawatha)	6 to 20
Knight (Hiawatha)	6 to 17

The coal beds generally have shallow dips to the west but are cut by several major north–south trending fault zones, or grabens, with displacements ranging from a few feet to a several hundred feet. These

normal faults offset the coal beds and interfere with mining; however, there is usually sufficient room between the faults to conduct mining (Doelling 1972a).

Coal Quality

Coal beds of the Wasatch Plateau field generally have good quality, with low ash and sulfur contents, and high heat contents. Most of the coals are high-volatile C bituminous in rank, although locally, some coals in the northern part of the field are high-volatile B bituminous.

The Wasatch Plateau coal beds are often resin-rich with resin contents of 2 to 15%. Although not presently used, the resin has been historically recovered as a by-product for use in adhesives, paints and coatings, and as a binder in printing ink (Tabet, et al. 1995a). Coal quality statistics are summarized in Table A8-17 and Table A8-18 for two southern Wasatch Plateau field coal beds that have a sample population of more than 30 proximate analyses, and usually more than 20 ultimate analyses (UGS coal quality database, in preparation). The names reported for the Wasatch Plateau coal beds in the coal quality database do not reflect the new names assigned to the beds based on newer understanding of the stratigraphic relations of the beds. Time constraints did not allow the analytical data to be updated with new bed names, and thus the analyses reported here use the older bed names originally assigned. Those two Wasatch Plateau coal beds (using original names) are the Hiawatha, and the Upper Hiawatha.

Table A8-17. Coal Quality Statistics for the Hiawatha Bed From the Upper Cretaceous Blackhawk Formation in the Wasatch Plateau Coal Field (As-received Basis)

Characteristic	Mean	Maximum	Minimum	Standard Deviation	Sample Population
Ash (%)	6.67	25.72	0.05	1.98	521
Btu/lb	12,689	14,530	9,073	487	521
Fixed Carbon (%)	45.64	54.40	31.26	1.89	502
Volatile Matter (%)	42.0	47.4	4.4	2.3	509
Sulfur (%)	0.63	4.06	0.29	0.25	479
Moisture (%)	5.55	14.24	0.70	1.58	537
Carbon (%)	71.60	81.88	51.38	6.05	58
Hydrogen (%)	5.51	6.30	3.89	0.51	58
Nitrogen (%)	1.3	1.7	0.3	0.2	58
Oxygen (%)	12.18	17.18	9.25	2.18	58
Chlorine (%)	0.05	0.13	0.00	0.04	22

Table A8-18. Blackhawk Formation in the Wasatch Plateau Coal Field (As-received Basis)

Characteristic	Mean	Maximum	Minimum	Standard Deviation	Sample Population
Ash (%)	8.99	25.09	2.79	5.07	34
Btu/lb	11,503	12,396	9,443	750	29
Fixed Carbon (%)	45.28	51.95	34.66	4.03	30
Volatile Matter (%)	37.73	44.52	33.10	2.45	32
Sulfur (%)	0.54	1.46	0.28	0.24	34
Moisture (%)	8.04	12.9	2.66	1.87	31

Characteristic	Mean	Maximum	Minimum	Standard Deviation	Sample Population
Carbon (%)	64.90	69.75	53.09	4.80	22
Hydrogen (%)	4.59	5.20	3.99	0.32	22
Nitrogen (%)	1.13	1.44	0.96	0.12	22
Oxygen (%)	11.07	18.0	9.22	1.67	22
Chlorine (%)	0.01	0.11	0.00	0.02	21

The Wasatch Plateau coal beds have similar mean proximate and ultimate analytical values, but the Upper Hiawatha bed, which mainly occurs in the southern part of the field, shows the greatest quality differences. This bed is slightly higher in ash and moisture, and slightly lower in heat content and volatile matter content than the other bed reported here. In general, the coals of the Wasatch Plateau decrease slightly in rank and heat content from north to south.

Coal Resources

The Wasatch Plateau coal field is a major Utah coal field with original, in-place coal resources in excess of 10.2 billion tons (Doelling 1972a). Based on UGS work carried out using BLM criteria, at the end of 2002, the Wasatch Plateau contained 1,122.5 billion tons of remaining, unleased, in-place coal resources that were in coal beds at least 6 feet thick and that occurred between depths of 200 to 2,500 feet. The amount of coal likely to be mined and recovered in the near future is discussed in the reasonably foreseeable development scenario at the end of this report. Some of the coal resources in the Sevier County portion of the Wasatch Plateau field are likely to be mined in the next 30 years to provide extended life for the SUFCO mine there. There are also additional resources that could support at least two new mines in the Sanpete and Sevier counties portion of the Wasatch Plateau, but their development would likely occur in the more distant part of the 30-year planning horizon.

Emery Coal Field

Setting

The Emery coal field was originally defined from the surface exposures of the Ferron Sandstone Member of the Mancos Shale (Lupton 1916). The surface exposures cover an area 25 miles long and 2 to 10 miles wide near the Sevier-Emery County border. This area lies about 45 miles southwest of Price and the site of the nearest rail loadout. The field, as originally defined, is bounded on the east by an erosional escarpment, and on the west by a fault zone (Doelling 1972a). Surface exposures show the coal thinning and pinching out to the north; however, published drilling data show that similar thick coal beds also occur in the Upper Cretaceous Ferron Sandstone in the subsurface extending northward all the way to Price (Bunnell and Holberg 1991, Tabet, et al, 1995b). Based on published coal thickness data, the northern boundary of the field should be defined near Price and could potentially extend farther north into the Uinta Basin.

Coal Geology

The coal of the Emery field occurs in the upper part of the 300- to 900-foot-thick Ferron Sandstone Member of the Mancos Shale. Where exposed, this unit contains 13 coal beds, 4 of which exceed 7 feet in thickness. Lupton (1916) gave the beds letter designations from A to M in ascending order of occurrence. Beds I and J are the most important, and the separation between them is minimal in many areas, resulting

in a single bed up to 25 feet thick (Doelling 1972a). The dip of the coal beds varies from 2 to 12 degrees to the west, with most between 4 and 7 degrees. Faulting is minor and presents little difficulty to mining. In the southern end of the field, 76% of the resources are under less than 1,000 feet of cover, and very thin overburden in some areas makes surface mining possible. The reported thickness ranges of the major coal beds in the Emery coal field are given in Table A8-19.

Table A8-19. Thickness Ranges of the Major Coal Beds in the Emery Coal Field

Emery Field Beds	Thickness Range (ft)
Upper Group	
J bed	6 to 13
I bed	6 to 30
Lower Group	
C bed	6 to 20
A bed	6 to 16

Coal Quality

The quality of coal from the Emery field, particularly the sulfur and ash contents, is quite variable throughout the field. Generally the sulfur and ash contents of the beds from this field are somewhat higher than those for coals from the Book Cliffs and Wasatch Plateau coal fields. The rank of the coal is considered to be high-volatile C bituminous where fresh and unweathered. Shallow coal beds are commonly oxidized or burned for a considerable distance away from the outcrop. Summary coal quality data for several beds from the southern Emery coalfield are shown in Table A8-20, Table A8-21, Table A8-22, and Table A8-23.

Table A8-20. Coal Quality Statistics for the A Bed From the Upper Cretaceous Ferron Sandstone Member of the Mancos Shale in the Southern Emery Coal Field (As-received Basis)

Characteristic	Mean	Maximum	Minimum	Standard Deviation	Sample Population
Ash (%)	13.22	29.33	4.70	8.76	10
Btu/lb	11,979	13,529	9,504	1,393	10
Fixed Carbon (%)	46.32	51.01	37.88	4.38	10
Volatile Matter (%)	37.04	41.97	28.65	4.63	10
Sulfur (%)	0.78	1.46	0.37	0.33	10
Moisture (%)	3.43	5.10	2.60	0.87	10
Carbon (%)	66.63	74.84	53.44	7.70	9
Hydrogen (%)	4.85	5.50	3.88	0.66	9
Nitrogen (%)	1.25	1.47	0.88	0.17	9
Oxygen (%)	10.48	15.50	8.52	2.46	9
Chlorine (%)	0.03	0.06	0.00	0.02	8

Table A8-21. Coal Quality Statistics for the C Bed From the Upper Cretaceous Ferron Sandstone Member of the Mancos Shale in the Southern Emery Coal Field (As-received Basis)

Characteristic	Mean	Maximum	Minimum	Standard Deviation	Sample Population
Ash (%)	14.54	23.60	6.60	6.81	6
Btu/lb	11,275	12,300	9,965	913	6
Fixed Carbon (%)	43.42	47.90	39.60	3.39	6
Volatile Matter (%)	37.79	40.70	33.40	2.79	6
Sulfur (%)	1.26	2.10	0.66	0.63	6
Moisture (%)	4.25	5.21	2.30	1.14	6
Carbon (%)	64.98	68.60	58.90	4.48	4
Hydrogen (%)	5.30	5.70	4.80	0.42	4
Nitrogen (%)	1.18	1.30	1.00	0.15	4
Oxygen (%)	14.65	16.40	12.70	1.74	4
Chlorine (%)	---	---	---	---	---

Table A8-22. Coal Quality Statistics for the G Bed From the Upper Cretaceous Ferron Sandstone Member of the Mancos Shale in the Emery Coal Field (as-received basis).

Characteristic	Mean	Maximum	Minimum	Standard Deviation	Sample Population
Ash (%)	14.15	39.09	3.74	9.40	12
Btu/lb	11,630	13,319	8,020	1,520	12
Fixed Carbon (%)	43.48	50.49	29.69	5.71	12
Volatile Matter (%)	38.06	43.81	25.72	4.62	12
Sulfur (%)	1.03	2.22	0.09	0.83	7
Moisture (%)	4.30	8.80	3.14	1.60	12
Carbon (%)	61.96	72.81	44.81	9.43	7
Hydrogen (%)	4.67	5.10	3.35	0.64	7
Nitrogen (%)	1.24	1.52	1.06	0.18	7
Oxygen (%)	10.06	18.90	5.35	4.28	7
Chlorine (%)	0.03	0.06	0.00	0.03	7

Table A8-23. Coal Quality Statistics for the I Bed From the Upper Cretaceous Ferron Sandstone Member of the Mancos Shale in the Southern Emery Coal Field (As-received Basis)

Characteristic	Mean	Maximum	Minimum	Standard Deviation	Sample Population
Ash (%)	8.20	17.26	4.01	2.95	47
Btu/lb	12,179	13,139	8,467	889	43
Fixed Carbon (%)	47.4	51.9	37.3	2.9	46
Volatile Matter (%)	38.91	43.89	34.30	1.72	46
Sulfur (%)	1.12	6.58	0.31	1.11	46
Moisture (%)	5.5	16.7	2.8	2.4	47
Carbon (%)	68.58	73.8	61.25	3.87	13
Hydrogen (%)	5.2	5.7	4.8	0.3	13
Nitrogen (%)	1.26	1.35	1.10	0.07	13
Oxygen (%)	13.06	18.80	5.82	3.42	13
Chlorine (%)	0.05	0.07	0.03	0.02	2

Coal Resources

The Emery coal field is also a major Utah coalfield; Quick, et al. (in preparation) estimate remaining, in-place, minable coal resources for the southern portion of the field to be 948 million tons. Emery County contains 68% of the in-place, minable coal resources of the Emery coal field, or 644 million tons. The Sevier County portion of the Emery coal field contains the remaining 32% of the resource, or 304 million tons, and this portion of the field is likely to be mined later than the Emery County portion of the field.

PAST PRODUCTION AND TRENDS

Introduction

Historically, most Utah coal production has come from underground mines in central Utah, and future production will probably continue to be predominantly from the Book Cliffs, Wasatch Plateau, and the Emery fields in this region. However, most of the easy-to-mine coal in this region will likely be depleted in the next 20 to 25 years, and coal from elsewhere in Utah will likely need to be mined to provide fuel for the state's power plants. One nearby field with coal resources favorable for mining is the Henry Mountains coal field.

Henry Mountains Coal Field

Coal in the Henry Mountains coal field has been mined in the past on a very limited scale from both the Ferron Sandstone Member of the Mancos Shale and Muley Canyon Sandstone. This coal was used locally to supply ranchers and residents of nearby towns (Doelling 1972b). Doelling (1972b) estimated the total tonnage removed from the field at about 9,000 tons, with most of it coming from the Ferron.

Ferron coal was first developed at the south end of the coal field at the Stanton mine. A couple thousand tons of coal was mined intermittently between 1888 and 1900 to supply gold dredges on the Colorado River to the south (Doelling 1972b). Small-scale mining of Ferron coal took place over a longer period at the far northern end of the field near Factory Butte. Mining in this area began in 1908 and continued sporadically up through the 1970s. From 1908 through the 1950s, underground coal mining removed about 5,900 tons for local use. Later, the Atlas-Dirty Devil Mining Company briefly attempted strip mining the coal near Factory Butte in the late 1970s. This company opened a surface mine in June 1978, trucked the coal to Green River, and sent a test shipment by rail to the power plant at Moapa, Nevada (Uresk 1979). Problems with coal quality prevented this operation from reaching full production.

The Muley Canyon coals were first developed around 1914 by tunneling into outcrops at the northern extent of this unit. Several small mines were opened along Sweetwater and Dugout creeks to supply coal for local use (Hunt, et al. 1953). Hunt et al. (1953) claim this coal was also later used to fuel a rig drilling a couple of test wells in the Green River Desert. The last known activity at these mines was in the 1940s (Doelling 1972b), and the total coal removed from these mines is estimated to be about 1,000 tons.

During the mid 1970s, AMAX Coal Company, Cayman Corporation, Consolidation Coal Company, Gulf Mineral Resources Company, and the Federal Government carried out widespread exploration on lands covering most of the Muley Canyon coal area. The primary interest at the time was evaluating surface-minable coal deposits, but environmental concerns and limitations, particularly bison herd habitat, eventually caused all prospecting areas to be dropped by 1983. The availability of the exploration data from the combined efforts of all the parties active in the 1970s has allowed the delineation of more than 120 million tons of deep Muley Canyon coal resources that could be mined with less surface disturbance than the originally anticipated surface mines.

Wasatch Plateau Coal Field

The Wasatch Plateau coal field covers parts of Carbon, Emery, Sanpete, and Sevier counties. Overall, this field has both the greatest annual and greatest cumulative coal production of any coal field in the State of Utah (Utah Department of Natural Resources 2003). Coal in this field was first developed in Carbon County during the late 19th century. Over the years, production has expanded from the northern, Carbon County portion of the field to the central and southern parts of the field in Emery and Sevier counties. The Sanpete County portion of the field is generally deep and has not been mined. Cumulative production from more than 80 mines through 2001 has totaled 523.7 million tons.

In 2001, eight active mines in this field produced 21.92 million tons of coal, or about 81% of the state's total. Production from this field has increased rapidly since the mid-1980s, doubling since 1986.

Emery Coalfield

Consolidation Coal Company idled the Emery coal mine in 1990, and through 1994 the activity at the mine was limited to shipping a very small quantity of coal from its stockpile. In 1995, Consolidation Coal decided to seal the portals of the mine and limit maintenance to pumping water to keep the mine from flooding. In early 2002, the company announced plans to re-open the Emery mine and did so by the end of that year.

Production from the Emery coal field has been erratic. Falling coal prices and the lack of nearby rail transportation have undoubtedly hindered large-scale development of the abundant coal resources from this field. Total production from the field through 2001 was about 9.5 million tons (Utah Department of Natural Resources 2003).

CURRENT PRODUCTION ACTIVITIES

Introduction

According to U.S. Mine Safety and Health Administration records, Utah's 2002 coal production was 24.7 million tons, a significant drop from the 2001 level of 27.0 million tons. A weak U.S. economy in 2002 led the average mine-mouth coal price to drop a few percent from 2001, but coal prices should rebound if the U.S. economy starts to grow in late 2003. Most of Utah's coal production comes from large, highly productive mines equipped with longwall mining machines. Four of Utah's mines produced more than 3 million tons in 2002 and rank among the nation's largest underground coal mines.

Coal Industry Structure

The Utah coal industry is highly competitive and production over time has steadily become concentrated among fewer companies with fewer, but larger mines. For example, Utah had 29 mines operated by 16 companies in 1982; however, by 2001 only 11 coal mines were operated by 5 parent coal companies. In addition to raw coal producers, one company, DTE Utah Synfuel (a subsidiary of Detroit Edison), processes and pelletizes coal for sale as a synthetic fuel. As of 2003, the five parent coal companies operating Utah coal mines are Andalex Resources Incorporated (three mines), Canyon Fuel Company (three mines), CONSOL Energy Incorporated (1 mine), CO-OP Mining Company (one mine), and Interwest Mining Company (one mine). Cyprus Plateau Mining Company exited the Utah coal mining business as recently as 2000, and Lodestar Mining Incorporated shut its last Utah coal mine in early 2003 as a result of bankruptcy.

Andalex Resources Incorporated

Andalex Resources has operated coal mines in Utah since 1980, when it opened the Tower Division to operate the Aberdeen, Apex, Centennial, and Pinnacle mines in the Book Cliffs field northeast of Price. In 2003, mining at the Tower Division is currently limited to continuous miner operations, but the mine has requested some new Federal leases to the north of the existing leases in the hope of restarting longwall mining there. Andalex, through its subsidiary Genwal Resources, operates a second coal mine, the Crandall Canyon mine, which is located in the Wasatch Plateau coal field. Andalex purchased its 50% interest in this company in 1994 from Nevada Power; the Intermountain Power Agency (IPA) owns the remaining 50% of Genwal Resources. Longwall reserves at this mine were exhausted in early 2003, and the mine will decrease production as it reverts to a continuous miner operation. Andalex's third mine, West Ridge, was opened in the Book Cliffs coal field in 2000 on leases it purchased from British Petroleum in 1997. Like the Crandall Canyon mine, West Ridge mine is operated by Andalex, but jointly owned by Andalex and the IPA through a company named West Ridge Resources. The West Ridge mine had a longwall mining machine installed in 2001. Production in 2002 from the Tower Division, Crandall Canyon, and West Ridge mines was 0.7, 3.3, and 2.3 million tons, respectively. These three mine sites accounted for 25% of Utah's 2002 coal production.

Canyon Fuel Company, LLC

Canyon Fuel Company operated three coal mines with longwall machines in Utah in 2002. Canyon Fuel Company is owned by the parent company Arch Coal Company (>99%). The company originally included a 9% interest in the Los Angeles Export Terminal Company, but during 2001, Canyon Fuel wrote off the value of its investment in that bankrupt terminal, and the terminal was dismantled in 2003. The three Utah mines operated by Canyon Fuel are the Dugout Canyon, Skyline, and SUFCO mines.

The Dugout Canyon mine, opened in 1998, is in the Book Cliffs coal field, while the Skyline and SUFCO mines are in the Wasatch Plateau coal field. During 2002, these three mines produced a combined total of 13.15 million tons, with 2.08 at Dugout Canyon, 3.48 at Skyline, and 7.60 at SUFCO. Canyon Fuel's mines accounted for 53% of the annual tonnage of coal produced in Utah in 2002. However, in 2003, low coal prices, a depressed market, and difficult mining conditions caused Canyon Fuel to announce that the Skyline mine would be idled in the second quarter of 2004. Although that mine has undeveloped resources on leases to the north, they will not be developed until the coal market improves according to the company statement.

CO-OP Mining Company

The CO-OP Mining Company, a family-owned company, operates the Bear Canyon #1 and #3 mines; the Bear Canyon #2 was idled in 2001. These mines use continuous mining machinery to recover the coal. During 2002, these two mines in the Wasatch Plateau coal field produced a combined total of 0.96 million tons, or about 4% of the state's total for that year. In 1997, the company purchased the Mohrland property from the IPA to provide at least 30 million tons of coal resources for future mining development. This 3,000-acre tract lies due east of the Bear Canyon #1 mine, but is separated from it by a major fault.

Interwest Mining Company

In 2002, PacifiCorp subsidiary Interwest Mining Company operated just one longwall mine in Utah, the Deer Creek mine. This mine produced 3.98 million tons of coal in 2002, or 16% of the state's total coal production for that year. This mine is located in the Wasatch Plateau coal field. The life of the Deer Creek mine was extended in 1999 with the acquisition of the Mill Fork Federal lease tract, which added another 46 million tons of coal to the company holdings.

CONSOL Energy Incorporated

CONSOL Energy reopened the Emery mine in late 2002 after being idle since 1990. Production from this mine in 2002 totaled 0.03 million tons, or one-tenth of one percent of the state's total for that year. This is the only mine operating in the Emery coal field. From 1998 through 2002, Utah has seen the closure of the Star Point, Trail Mountain, and White Oak mines in the Wasatch Plateau coal field, and the Soldier Canyon and Willow Creek mines in the Book Cliffs coal field; the loss of all this productive capacity probably has created a market opportunity that the Emery mine can exploit to remain competitive. This market opportunity will also be enhanced as the Crandall Canyon mine stops longwall production in 2003 and reverts to a smaller, continuous miner operation. CONSOL hopes that the loss of productive capacity at other Utah mines in recent years will allow the Emery mine to ramp up production and eventually install a longwall machine.

Coal Markets

Since the beginning of the new millennia, Utah has experienced a contraction in the number of market segments consuming its coal (Utah Department of Natural Resources 2003). During the late 1990s, coal exports to Pacific Rim nations accounted for 10% of Utah coal production, but by 2003 a strong U.S. dollar, strong competition from Australian and Indonesian producers, and weak Asian economies combined to eliminate an overseas market for Utah coal. Also, the late-2002 final closure of the Geneva Steel coke ovens permanently ended the small coking market for Utah coal.

Utah's main coal market is at electric utility and cogeneration plants primarily in Utah, Nevada, and California. This market segment has traditionally consumed about 75% of the coal produced in Utah, and with the loss of the export market, this market segment's share will increase. The second largest market

for Utah coal is the industrial sector, which has historically consumed about 13% of Utah coal production. The final segment supplied by Utah coal producers is the residential and commercial market; this segment has traditionally consumed 1 or 2% of annual production. Even with the loss of the export and coking coal markets, demand for Utah coal is likely to require annual coal production near 25 million tons for the foreseeable future. Should the plans to expand Utah's electric generation capacity at the Hunter or IPA power stations materialize in the next 10 years, the annual demand for Utah coal could rise to the 30 million ton level. In spite of increasing environmental regulation of emissions from coal-fired power plants, coal still remains a low-cost fuel for electricity generation.

Extraction of Utah coal has been accelerating at a rapid pace in the last 20 years. A time span of 111 years was needed to produce the first 415 million tons of coal from Utah, but only 20 more years were required to produce the second 415 million tons (e.g., by 2001). The next 415 million tons will probably be extracted in 15 years, or by about 2016. Previous UGS work for the BLM identified about 960 million tons of potentially recoverable coal in the Carbon and Emery counties portion of the Book Cliffs and Wasatch Plateau. This estimate was optimistic because it did not take into account site-specific problems in certain areas such as inferior coal quality, losses owing to problems like unmanageable roof and floor, lands that may be unacceptable for leasing, or difficulties such as unexpectedly high levels of water or gas infusions that may hinder actual coal recovery in some areas. At best, these reserves could provide all the coal needed to supply traditional markets for the next 30 years. However, in spite of the potential of the Book Cliffs and Wasatch Plateau fields in Carbon and Emery counties to hypothetically provide all the coal needed by current markets, one mine has reopened in 2002 in the Emery coal field, showing that other market forces such as ease of permitting, proximity to specific customers, or restrictive coal ownership patterns may push coal production into fields outside the Book Cliffs and Wasatch Plateau fields in the next 30 years before the reserves in the latter fields are fully depleted. Therefore, alternative supply regions, such as the Emery and Henry Mountains coal fields, need to be kept open for potential future development in the event there is unanticipated early reserve depletion or abandonment in currently operating areas.

REASONABLY FORESEEABLE DEVELOPMENT

Introduction

While it is impossible to know precisely when and where minable coal resources will be developed in the next 15 or 30 years, the coal resources that are of minable thickness and at favorable depths can be identified as potentially recoverable in the fields outside the traditional mining areas of the Book Cliffs and Wasatch Plateau coal fields in Carbon and Emery counties. Within the Richfield planning area, there are three coal areas that are attractive for future coal mining development. They are, in decreasing order of development potential, the Wasatch Plateau coal field of Sanpete and Sevier counties, the Emery coal field of Sevier County, and the Henry Mountains coal field of Garfield and Wayne counties.

Wasatch Plateau Coal Field (Sanpete and Sevier Counties)

Based on work by the UGS for the BLM, an estimated recoverable resource base of 773.8 million tons of unleased coal is available for mining in the Wasatch Plateau coal field. About 162.8 million tons are likely to be mined in the period from 2003 through 2017, along with the already leased coal resources. Of the coal to be mined in the first 15-year period, about 101 million tons will come from the Carbon-Emery portion to the Wasatch Plateau, while 51.5 million tons is estimated to be recovered from the Sevier County portion near the SUFCO mine (see Table A8-24).

Another 621.0 million tons of recoverable coal is available for mining from 2018 through 2032 and beyond. About 61% of the coal to be recovered in the second 15-year period is expected to come from Carbon and Emery counties, and 39% is expected to come from Sanpete and Sevier counties (see Table A8-24). More than 95% of the coal identified as available for mining in the next 30 years lies within 0.75 miles of a thickness measurement point or in the demonstrated resource reliability category (Wood, et al. 1983). In total, the Sanpete and Sevier counties portion of the Wasatch Plateau contains about 291.1 million tons of recoverable coal.

Table A8-24. Remaining, In-place, Demonstrated (95%) Unleased Resources by Mining Period for the Wasatch Plateau Coal Field

Mining Period	Counties	In-place	Recoverable
2003-2017	Carbon-Emery	148.7	101.3
2018-2032+	Carbon-Emery	558.0	381.3
2003-2017	Sanpete-Sevier	73.5	51.5
2018-2032+	Sanpete-Sevier	342.3	239.7
Total	**All Counties**	**1,122.5**	**773.8**

Given in millions of short tons (for coal beds mostly > 6 feet thick, and with > 200 feet, but < 2,500 feet of overburden).

Emery Coal Field

The UGS has recently reappraised the available coal in the Emery coal field with funding provided by the USGS. Within the Emery coal field, the UGS identified 948 million tons of demonstrated in-place coal resources, the majority of which occur in Emery County (644 million tons), but there are also 304 million tons identified in Sevier County (see Table A8-25). The coal was broken out as either surface or deep minable, with 96% being deep or underground minable. The deep minable coal occurs in eight beds that are 6 feet thick or greater, and the surface minable coal occurs in one bed that is 4 feet thick or greater. The majority of the coal in Sevier County occurs in the A bed (58%), the lowest one stratigraphically. Another 31% of the in-place coal resource occurs in the I bed, with small amounts in the other six coal beds. Recoverable coal was estimated at 65% of the in-place deep coal and 80% of the in-place surface minable coal. Using these recovery factors, there are about 190 million tons of deep recoverable coal, and 9 million tons of surface minable coal in the Sevier County portion of the Emery coal field. The Sevier County minable resources would probably be mined after the Emery County portion of the field, which contains an estimated 304 million tons of recoverable deep minable coal and 141 million tons of recoverable surface minable coal. The Emery County portion of the Emery coal field reserves is sufficient to last at least 30 years, so the Sevier County reserves are likely to be mined only near the end of the 30-year planning horizon.

Table A8-25. Original, In-place, Demonstrated, Minable Coal Resources (Millions of Tons) Given by County for the Southern Emery Coal Field

Mining Period	County	In-place		Recoverable		Total Recoverable
		Surface	Deep	Surface (80%)	Deep (65%)	
2003-17	Emery	0	49	0	32	32
2018-32	Emery	176	419	141	272	413

Mining Period	County	In-place		Recoverable		Total Recoverable
		Surface	Deep	Surface (80%)	Deep (65%)	
2030-50	Sevier	11	292	9	190	199
TOTAL		**188**	**760**	**150**	**494**	**644**

From Quick, et al. in preparation; for coal beds averaging > 6 feet thick and with < 2,500 feet of cover.

Henry Mountains Coal Field

The Henry Mountains coal field contains two areas in the Richfield planning area that have a slim chance of being mined in the next 30 years, but that may draw some serious attention in the next 50 years. One area, located to the north of Factory Butte in Wayne County, contains surface minable Ferron Sandstone coal. The second area, primarily in Garfield County, contains deep minable Muley Canyon Sandstone coal.

While the Henry Mountains coal field contains hundreds of millions of tons of in-place coal in the Ferron zone, only a small portion of these resources have any chance of being mined in the next 30 years. The Ferron Sandstone Member resources with the best development potential are the surface-minable resources near Factory Butte. These resources are the closest to rail transport and the central Utah power plants, they are thickest and shallowest, and they have been extensively drilled, which would allow for adequate and prompt mine planning. The major drawbacks of these resources are their moderately high sulfur content (2 to 3%) and the small size of the resource. However, as the resources in Carbon and Emery counties dwindle, this area could produce one million tons annually over a 14-year period, and the higher sulfur coal could be blended at a power plant with lower sulfur coal from elsewhere. The in-place and strip-mine recoverable coal resources from the Factory Butte area of the Ferron Sandstone Member are summarized in Table A8-26.

Table A8-26. In-place and Recoverable Coal Resources by Mining Period for the Ferron Sandstone Member in the Henry Mountains Coal Field

Mining Period	In-place	Recoverable (80%)
2030 or beyond	17.60	14.08

Given in millions of short tons (for coal in beds mostly > 6 feet thick and with <100 feet of overburden).

The coal resources of the Muley Canyon Sandstone in Garfield County originally attracted industry attention for the significant surface-minable tonnages that occur around the periphery of Tarantula Mesa; however, it is unlikely that future surface mining will be permitted within sight of nearby Capitol Reef National Park. Therefore, the deeper Muley Canyon coal resources found under Tarantula Mesa have the best chance of being mined in the foreseeable future because they could be mined with little or no visual impact on Capitol Reef National Park if developed from the east side of Tarantula Mesa. These deep minable resources generally occur as one bed that is 8 to 14 feet thick and has overburden of less than 1,500 feet, which would be ideal for high-efficiency longwall mining methods. While the whole area under Tarantula Mesa contains more than 500 million tons of in-place, deep minable resources in the Muley Canyon, only 179.5 million tons meet the BLM criterion requiring that at least 80% of the resources fall in the demonstrated reliability category. Because little is known of the ease or difficulty of underground mining of coal from the Muley Canyon, a conservative mining recovery factor of 65% was

applied to the demonstrated resources to arrive at an estimated recoverable coal resource of 116.7 million tons (see Table A8-27). This is enough coal to support a longwall mine producing 4 million tons per year for nearly 30 years. The earliest date any potential development of the Muley Canyon coal could occur is estimated to be about 2030.

Table A8-27. In-place and Recoverable Coal Resources by Mining Period for the Muley Canyon Sandstone in the Henry Mountains Coal Field

Mining Period	In-place	Recoverable (65%)
2030 or beyond	179.5	116.7

Given in millions of short tons (for coal in beds mostly > 6 feet thick and between 100 feet and 1,500 feet of overburden).

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COAL UNSUITABILITY REPORT HENRY MOUNTAINS COAL FIELD

INTRODUCTION

The Bureau of Land Management has the responsibility for implementing Federal regulations 43 CFR 3461, Federal Lands Review: Unsuitability for Mining. The general unsuitability criteria, the Federal land review, and the prohibitions against mining are derived from the applicable sections of the Surface Mining Control and Reclamation Act of 1977 [30 U.S.C. 1272(a), (b), (e)]. This review of coal unsuitability is in conjunction with the revision of the existing land use plan and the development of a Resource Management Plan for the Richfield Field Office.

As addressed at 43 CFR 3420.1-4, the Secretary of the Interior may not hold a lease sale of public land containing coal deposits, unless the land is subject to a comprehensive land use plan. Only those lands that have coal resources with development potential may be considered as acceptable for further consideration for leasing. The coal resources, which are evaluated for unsuitability, have been delineated in a report, Coal Resource Evaluation of the Henry Mountains Coal Field, Garfield and Wayne Counties, Utah (2004). The coal report identifies public land that has a coal resource that is to be considered for coal leasing through the land use planning.

This report addresses the unsuitability of the coal resources that have potential for development in the Henry Mountains coal field. Following the identification of the coal resources with development potential, the Bureau of Land Management shall determine whether areas are unsuitable for all or certain stipulated methods of mining. The Department of the Interior has developed 20 criteria that are used for this determination, which are presented at 43 CFR 3461.5.

GEOLOGIC SETTING

The Henry Mountains coal field contains predominately sedimentary strata, which are Jurassic and Cretaceous in age. The coal field is ovate in general outline with dimensions that are approximately 48 miles long in a north-south direction and as much as 18 miles wide in an east-west direction. The Jurassic strata crop out around the perimeter of the field, and the Cretaceous strata are exposed in the central part. The coal-bearing strata are mapped as part of the Ferron Sandstone and the Muley Canyon Sandstone Members of the Mancos Shale.

The Henry Mountains coal field is in a structural basin, centered on the Henry Mountains syncline. The west limb is defined by the Waterpocket Fold; the east limb coincides with the intrusive rocks of the Henry Mountains. The coal-bearing strata between the limbs of the basin are nearly horizontal.

LANDS CONSIDERED

Generally, the Henry Mountains coal field is at T. 27-34 S., R. 8-11 E., SLM, Garfield and Wayne Counties, Utah (Map 1), and the coal field contains 302,876 acres. Most of the land in the coal field is owned by the U.S., but State and privately owned lands are also interspersed with the Federal lands. The Federal lands are administered by the Richfield Field Office of the Bureau of Land Management. Currently, no Federal coal leases are authorized on public lands located within the Henry Mountains coal field.

COAL RESOURCES

A total of 2,209.6 million tons of in-place coal has been identified in the Henry Mountains coal field. This estimate is from the coal report, which is based mostly on resource information from Tabet (1999, 2000).

In the coal report, coal resources that are greater than 2 feet in thickness and that have less than 100 feet of overburden are considered to have potential for development by surface mining methods. Underground, conventional, mining methods are considered applicable to coal resources that are 6 feet or greater in thickness and that have a depth of 100 feet or more.

An exception to the surface and underground parameters was made at Factory Butte at T. 27 S., R. 9 E, where a 270 acre area has slightly greater than 100 feet of overburden. Since the majority of the coal resource at Factory Butte meets the parameters for surface mining, this coal resource that exceeded the 100-foot depth parameter was designated as a surface minable resource.

Surface minable coal resources total approximately 466.1 million tons and by underground minable coal resources total approximately 1,283.6 million tons. Thus, the total coal resource that is considered favorable for mining by surface or underground methods is 1,749.7 million tons. The coal resources that are considered to have development potential are displayed on Map 2. Ownership of the land with coal resources that has development potential is shown in Table A8-28.

Table A8-28. Henry Mountains Coal Resources

Land Status	Surface Minable Acres	Underground Minable Acres
BLM	36,028	50,512
NPS	1,170	756
State	5,556	3,869
Private	414	1,253
Total	**43,168**	**56,390**

Split ownership of private surface and Federal minerals is not presented in the above totals, due to limitations of the current GIS data base. The unsuitability criteria are applied to the Federal lands containing coal resources, as defined at 43 CFR 3400.0-5(o) and required by the regulations at 43 CFR 3461.2-1.

EVALUATION OF THE UNSUITABILITY CRITERIA

The coal resources with development potential are assessed for the unsuitability criteria as outlined at 43 CFR 3461.5. Underground mining of coal deposits is exempt from the criteria, where there would be no surface coal mining operations as stated at 3461.1.1(a). Surface mining operations include surface operations and surface impacts incident to an underground mine as stated at 43 CFR 3400.0-5(mm). In addition, at 43 CFR 3461.1(b), where underground mining will include surface operations and surface impacts on Federal lands to which a criterion applies, the lands shall be assessed as unsuitable unless an exception or exemption applies. Each criterion is subject to exceptions and/or exemptions as prescribed in the regulations.

As stated above, the criteria are applied to the Federal lands with coal resources that are identified as having development potential.

Criterion 1

Summary of the Criterion: All Federal lands included in the following land systems or categories shall be considered unsuitable: National Park System, National Wildlife Refuge System, National System of Trails, National Wilderness Preservation System, National Wild and Scenic Rivers System, National Recreation Areas, lands acquired with money derived from the Land and Water Conservation Fund, National Forests, and Federal lands in incorporated cities, towns, and villages.

1,926 acres of land with the identified coal resources are included within Capitol Reef National Park (Map 1). This land is deemed to be unsuitable for coal leasing. None of the remaining coal resources with development potential are contained within any of the other listed land systems or categories.

The exemptions for valid existing rights do not apply.

Criterion 2

Summary of the Criterion: Federal lands that are within rights-of-way, easements or surface leases for residential, commercial, industrial, or other public purposes on Federally owned surface shall be considered unsuitable.

Several authorized rights-of-way encompass Federal lands with coal resources having development potential (Map 3). These are listed in Table A8-29 below.

Table A8-29. Authorized Rights-of-Way

Serial Number	Holder	Legal Description	Type	Width (ft)
UTU-047320	Garfield County	T. 31 S., R. 9 E., Sec. 30, 31 T. 32 S., R. 9 E., Sec. 5, 6	Road	50
UTU-051955	Tercero Corp	T. 31 S., R. 9 E., Sec. 33	Water Facility	10
UTU-051980	Garfield County	T. 31 S., R. 8 E., Sec. 23-26	Road	50
UTU-0 094714	Federal Highway Administration	T. 28 S., R. 9 E., Sec. 22	Federal Aid Highway	200
UTU-0 057537	Garkane Power Association	T. 28 S., R. 9 E., Sec. 22	Power Transmission Line	50

The coal resources subject to a right-of-way are considered unsuitable; however, exceptions may be applicable where:

- All or certain types of coal development (e.g., underground mining) will not interfere with the purpose of the right-of-way or easement, or
- The right-of-way or easement was issued for a purpose for which it is not being used,
- The parties involved in the right-of-way or easement agree, in writing, to leasing,
- It is impractical to exclude such areas due to the location of coal and method of mining and such areas or uses can be protected through appropriate stipulations.

The above-listed rights-of-way are subject to surface and/or underground mining methods. Mining by underground methods is exempt and should not interfere with the intended use of a right-of-way facility. Where there could be surface operations and surface impacts associated with underground mining, the impacts would be mitigated, subject to an agreement with the right-of-way holder at the time of a specific leasing proposal. Where the coal resources would be mined by surface methods, the facility could be moved during the mining operations and re-located when the land is reclaimed, again, subject to an agreement with the right-of-way holder. Any agreements with the affected holder of the right-of-way would be negotiated at the time of the specific leasing proposal. The Federal lands subject to the above rights-of-way are considered suitable.

The exemption for substantial legal and financial commitments and on-going mining operations does not apply, since coal exploration and development are not currently present or authorized.

Criterion 3

Summary of the Criterion: The terms used in this criterion have their meaning set out in the Office of Surface Mining Reclamation and Enforcement regulations at Chapter VII of Title 30 of the Code of Federal Regulations. Federal lands affected by Section 522(e) (4) and (5) of the Surface Mining Control and Reclamation Act of 1977 shall be considered unsuitable. This includes lands within 100 feet of the outside boundary of a public road right-of-way, lands within 100 feet of a cemetery, or lands within 300 feet of any public building, school, church, community or institutional building, public park, or occupied dwelling.

Exceptions are allowed, if a lease may be issued for lands:

- Used as mine access roads or haulage roads that join the right-of-way for a public road;
- For which the Office of Surface Mining and Reclamation and Enforcement has issued a permit to have public roads relocated;
- If, after public notice and opportunity for public hearing in the locality, a written finding is made by the authorized officer that the interests of the public and the landowners affected by mining within 100 feet of a public road will be protected;
- For which owners of occupied dwellings have given written permission to mine within 300 feet of their buildings.

The coal lands of the Henry Mountain Coal Field do not fall within the stated distances of a cemetery, public building, school, church, community or institutional building, or public park.

Federal lands with development potential for coal resources are located within the100-foot extension of the rights-of-way for a road or highway, which are listed under Criterion 2. Those road and highway rights-of-way are subject to surface and/or underground mining methods. Mining by underground methods is exempt from this review and should not interfere with the intended use of a right-of-way facility. Where the coal resources would be mined by surface methods or a surface operation or impact would be associated with underground mining, the coal would only be leased in compliance with the Office of Surface Mining Reclamation and Enforcement following a public notice and hearing. The Federal lands within the 100-foot extension of road or highway rights-of-way, as listed under Criterion 2, are considered suitable for leasing under this Criterion.

Occupied dwellings are located at T. 31 S., R. 9 E., Sec. 21 at the Starlight Ranch, and T. 31 S., R. 9 E., sec. 32 at the King Ranch. These are furnished dwellings that are not occupied on a long-term basis. Specific distances to the dwellings from the coal resource on Federal land are unknown at this time; however, the distance to the dwellings is believed to be more than 300 feet.

At this time, the Federal lands are considered suitable for mining. If a proposal for leasing is submitted, then appropriate review would be completed with the involvement of the Office of Surface Mining and Reclamation and Enforcement and the public.

Criterion 4

Summary of the Criterion: Federal lands designated as wilderness study areas shall be considered unsuitable while under review by the Administration and the Congress for possible wilderness designation.

Three WSAs encompass lands with coal resources that have development potential by surface or underground mining methods (Map 4). As stated in the Federal regulations at 43 CRF 3461.1, underground mining is exempt from the unsuitability criteria; however, surface operations and surface impacts, which could be associated with underground mining, are unsuitable.

Coal leasing is subject to the Interim Management Policy for Land under Wilderness Review (IMP) in Section B.2.c. of Chapter 3 (Rel. 8-67, 7/5/95), as stated:

> *"The coal unsuitability criteria will be applied to all coal lands being considered in the BLM's planning system. The only BLM-administered lands that will be offered for competitive lease sale are those on which a final wilderness inventory decision has determined that the lands lack wilderness characteristics. Once the Congress has determined that a WSA will not be designated as wilderness, the area may be considered for competitive lease." (Italics added.)*

All lands that are presently included within the boundaries of a WSA have been determined to have wilderness characteristics.

Under Federal regulation the general exemption for underground mining applies to Federal land in a WSA if there are no surface operations or surface impacts. However, based on IMP, coal lands within a WSA cannot be offered for leasing at the present time.

The total acreage of land within WSAs that is unsuitable by either surface or underground methods is 28,683 acres. Approximately 1,400 acres of State land are included in that figure. However, State land is not part of a WSA and unsuitability under the Federal regulations does not apply to the State minerals.

A WSA is a temporary designation, pending Congress either legislatively designating the land as part of the National Wilderness System or releasing the land from consideration under the Wilderness Act. Federal land that is released by act of Congress would then be considered suitable for coal leasing under this Criterion, because such land would no longer be within a WSA or subject to IMP.

As authorized leases are not present on Federal lands, valid existing rights are non-existent. An exemption for existing leases is not applicable.

Criterion 5

Summary of the Criterion: Scenic Federal lands designated by visual resource management (VRM) analysis as Class I (an area of outstanding scenic quality or high visual sensitivity) but not currently on the National Register of Natural Landmarks shall be considered unsuitable.

Federal lands are being considered for designation as VRM Class I under all the alternatives in the Environmental Impact Statement for the Richfield Field Office Resource Management Plan (RMP) (Map 4). The lands, which are proposed for VRM Class I, are coincident with the designated WSAs.

An exception is allowed for the issuance of a lease if the surface management agency determines that surface coal mining operations will not significantly diminish or adversely affect the scenic quality of the designated area. The Federal lands that would be mined by underground methods are exempt; however, the location of the surface facilities would need to be considered in applying the visual resource objectives of Class I. The lands that would be mined by surface methods are considered unsuitable with the VRM Class I objectives. However, all lands that would be designated as VRM Class I in the RMP are unsuitable for surface and underground mining methods under Criterion 4 due to the coincidental boundaries of WSAs and VRM Class I and due to the non-impairment standard of IMP that would disallow the issuance of a lease within WSAs at the present time.

The exemption for substantial legal and financial commitments and on-going mining operations does not apply, since coal exploration and development are not currently present or authorized.

Criterion 6

Summary of the Criterion: Federal lands under permit and being used for scientific studies involving food or fiber production, natural resources, or technology demonstrations and experiments shall be considered unsuitable for the duration of the study.

None of the subject lands are under permit for the described scientific studies. This criterion is not applicable to the subject lands.

Criterion 7

Summary of the Criterion: All publicly or privately owned places which are included in the National Register of Historic Places shall be considered unsuitable.

There are no listed sites within the subject lands that are included on the National Register of Historic Places. This criterion is not applicable.

Criterion 8

Summary of the Criterion: Federal lands designated as natural areas or as National Natural Landmarks shall be considered unsuitable.

None of the subject lands are designated as part of a National Natural Landmark. This criterion is not applicable.

Criterion 9

Summary of the Criterion: Federally designated critical habitat for listed threatened or endangered (T&E) plant and animal species, and habitat proposed to be designated as critical for listed threatened or endangered plant and animal species or species proposed for listing, and habitat for Federal threatened or endangered species which is determined by the Fish and Wildlife Service and the surface management agency to be of essential value and where the presence of threatened or endangered species has been scientifically documented, shall be considered unsuitable.

An exception allows that a lease may be issued and mining operations approved if, after consultation with the Fish and Wildlife Service, it is determined that the proposed activity is not likely to jeopardize the continued existence of the listed species and/or its critical habitat.

Designated critical habitat for the Mexican spotted owl (Strix occidentalis) has been delineated by the U.S. Fish and Wildlife Service (Map 5). This critical habitat overlaps 13,753 acres of surface minable coal resources and 22,317 acres of underground minable coal resources.

BLM has completed inventories of Federal land and has identified areas within designated critical habitat which contains the constituent elements for Mexican spotted owl (Attachment 1). The critical habitat, based on the constituent elements and survey work, is also shown on Map 5. The critical habitat with the constituent elements as inventoried by BLM encompasses 576 acres of surface minable coal and 52 acres of underground minable coal.

The lands with coal resources that would be developed by underground mining are exempt from review. Surface operations and impacts are considered unsuitable, unless at the time of leasing, the Fish and Wildlife Service determines that the proposed activity is not likely to jeopardize the continued existence of the listed species.

If surface mining were to occur, the mining would be completed in stages, or mining units, with mining in one area while an adjacent, previously mined-out area would be reclaimed to restore the critical habitat. Thus, with concurrent mining and reclamation, surface mining would not impact all the acreage within a given lease at one time. Also, all of the above listed land with an identified potential for surface mining may not be developed, because the coal reserves that would support a mine could be less than the currently identified coal resource. However, the coal lands contained within the designated critical habitat with the constituent elements for Mexican spotted owl are considered unsuitable for surface coal mining and surface operations and impacts associated with underground mining. The inventoried habitat is also contained within a WSA and is unsuitable for leasing under Criterion 4.

Occurrences of Wright's fishhook cactus (Sclerocactus wrightiae) are known and documented in the vicinity of Factory Butte (Attachment 2). Habitat that is considered to be of essential value for this species encompasses the surface minable resource at T. 27-28 S., R. 8-9 E. These documented occurrences and habitat of essential value are not shown on Map 5 because the species could be further threatened by collection if the specific locations or habitat of essential value is included in a public document. The coal resources in vicinity of Factory Butte encompass 2,895 acres of Federal coal resources that are considered unsuitable for leasing.

The exemption for substantial legal and financial commitments and on-going mining operations does not apply, since coal exploration and development are not currently present or authorized.

Criterion 10

Summary of the Criterion: Federal lands containing habitat determined to be critical or essential for plant or animal species listed by a state pursuant to state law as endangered or threatened shall be considered unsuitable.

Habitat for the Mexican spotted owl is determined to be critical or essential by the State of Utah. This land is the same as identified for Criterion 9 (Map 5). The coal lands contained within the identified Mexican spotted owl habitat are considered unsuitable for surface coal mining and surface operations and impacts associated with underground mining. This habitat is also contained within a WSA and is unsuitable for leasing under Criterion 4.

The exemption for substantial legal and financial commitments and on-going mining operations does not apply, since coal exploration and development are not currently present or authorized.

Criterion 11

Summary of the Criterion: A bald or golden eagle nest or site on Federal lands that is determined to be active, and an appropriate buffer zone of land around the nest site, shall be considered unsuitable. Consideration of availability of habitat of prey species and of terrain shall be included in the determination. Buffer zones shall be determined in consultation with the Fish and Wildlife Service.

Active eagle nests are not known to be present on the Federal lands under consideration for leasing, based on surveys and knowledge of BLM biologists (Attachment 3). Therefore, this criterion does not apply to the subject lands. If active nests or sites are found at the time of leasing, then consultation will occur with the U.S. Fish and Wildlife Service and appropriate mitigations as outlined in the RMP will be applied.

Criterion 12

Summary of the Criterion: Bald or golden eagle roost and concentration areas on Federal lands, used during migration and wintering, shall be considered unsuitable.

Eagle roosts are not known to be present on the subject lands, therefore, this criterion does not apply. If roosts or concentration areas are found at the time of leasing, then consultation will occur with the U.S. Fish and Wildlife Service and appropriate mitigations as outlined in the RMP will be applied.

Criterion 13

Summary of the Criterion: Federal lands containing a falcon (excluding kestrel) cliff nesting site with an active nest shall be considered unsuitable. A buffer zone will be included around the nest site which considers the availability of habitat for prey species and terrain. Buffer zones shall be determined in consultation with the Fish and Wildlife Service.

Falcon cliff nesting sites with an active nest are not known to be present on the Federal lands (Attachment 3). This criterion does not apply to the subject lands. If an active cliff nesting site is found at the time of leasing, then consultation will occur with the U.S. Fish and Wildlife Service and appropriate mitigations as outlined in the RMP will be applied.

Criterion 14

Summary of the Criterion: Federal lands which are high priority habitat for a migratory bird species of high Federal interest on a regional or national basis, as determined by the surface management agency and the Fish and Wildlife Service, shall be considered unsuitable.

There is no high priority habitat for migratory bird species on the subject lands. This criterion is not applicable.

Criterion 15

Summary of the Criterion: Federal lands which the surface management agency and state jointly agree are habitat for resident species of fish, wildlife, and plants of high interest to the state and which are

essential for maintaining these priority wildlife and plant species shall be considered unsuitable. Examples of such lands include:

- Active dancing and strutting grounds for sage grouse,
- Winter ranges crucial for deer, antelope, and elk,
- Migration corridor for elk, and
- Extremes of range for plant species.

A lease may be issued if, after consultation with the state, the surface management agency determines that all or certain stipulated methods of coal mining will not have a significant long-term impact on the species being protected.

In accordance with the Utah Division of Wildlife Resources, crucial habitat is necessary to sustain the existence and/or perpetuation or introduction of one or more species of historic or existing high interest wildlife during crucial periods of their life cycle. This classification includes all habitats that are highly sensitive to surface disturbance and areas where fish or wildlife management considerations dictate that surface disturbance could not be tolerated by the species.

Coal resources with development potential by surface and underground mining methods are overlain by habitat that is crucial for bison and deer on the Henry Mountains (Maps 6 & 7). The acreage of crucial habitat is identified in Table A8-30.

Table A8-30. Acreage of Minable Coal Resources

Crucial Habitat	Surface Methods	Underground Methods
Bison	33,588	56,877
Deer	14,085	30,408

The coal resources within the crucial deer habitat are also included within the boundaries of the crucial bison habitat; thus, the acreage above for the deer is included in the acreage for the bison.

If surface mining were to occur, the mining would be completed in stages, or mining units, with mining in one area while an adjacent, previously mined-out area would be reclaimed to restore the crucial habitat. Thus, with concurrent mining and reclamation, surface mining would not impact all the acreage within a given lease at one time. Also, all the above land with an identified potential for surface mining may not be developed, because the coal reserves that would support a mine could be less than the currently identified coal resource.

This criterion provides that a lease may be issued, if after consultation with the state, a determination is made that all or certain stipulated methods of coal mining will not have a significant long-term impact on the species being protected. Given that exception, depending on the location, acreage, and specifics of an application to lease coal, impacts to the crucial habitat may be mitigated such that surface coal mining would not have a long-term impact to the species.

Underground mining is exempt. However, surface facilities associated with the coal mining could be located within the crucial habitat and could include a mine portal, buildings, and construction of roads. Haulage of mined coal would also be necessary. The location of these facilities and associated haulage roads could be located as to minimize or reduce the impact to the habitat. Surface operations and impacts would not have an adverse, long-term impact on the bison and deer habitat.

The exemption for substantial legal and financial commitments and on-going mining operations does not apply, since coal exploration and development are not authorized.

Criterion 16

Summary of the Criterion: Federal land in riverine, coastal and special floodplains (100-year recurrence interval) on which the surface management agency determines that mining could not be undertaken without substantial threat of loss of life or property shall be considered unsuitable for all or certain stipulated methods of coal mining.

Federal lands with a coal resource having development potential may be present along some streams, most notably the Fremont River in T. 28 S., R. 9 E., Section 22. Surface mining could be undertaken without substantial threat of loss to life or property. Any mining which is authorized would need to contain lease stipulations to control flooding and potential hazards associated with such events. Underground mining is exempt from review, and surface operations would not result in a substantial threat of loss of life or property. The coal resources having development potential are considered suitable for leasing.

The exemption for substantial legal and financial commitments and on-going mining operations does not apply, since coal exploration and development are not currently present or authorized.

Criterion 17

Summary of the Criterion: Federal lands which have been committed by surface management agency to use as municipal watersheds shall be considered unsuitable.

None of the subject lands with coal resources that have potential for development are within a municipal watershed. This criterion is not applicable.

Criterion 18

Summary of the Criterion: Federal lands with National Resource Waters, including areas identified by states in their water quality management plans and a buffer zone of Federal lands ¼ mile from the outer edge of the far banks of the water, shall be considered unsuitable.

None of the subject lands with coal resources that have potential for development include National Resource Waters which the State of Utah considers as High Quality Waters. This criterion is not applicable.

Criterion 19

Summary of the Criterion: Federal lands identified by the surface management agency, in consultation with the state in which they are located, as alluvial valley floors according to the definition in §3400.0-5(a) of this title, the standards in 30 CFR 822, the final alluvial valley floor guidelines of the Office of Surface Mining Reclamation and Enforcement when published, and approved state programs under the Surface Mining Control and Reclamation Act of 1977, where mining would interrupt, discontinue, or preclude farming, shall be considered unsuitable. Additionally, when mining Federal land outside an alluvial valley floor would materially damage the quantity or quality of water in the surface or underground water systems that would supply alluvial valley floors, the land shall be considered unsuitable.

There are no known conflicts with farming. The Fremont River has a relatively small alluvial valley floor. If surface mining were to occur within the alluvial valley floor, then mining and reclamation would be completed in a manner to minimize disturbances to the hydrologic balance within the permit area by reestablishing the essential hydrologic functions of the alluvial valley floors. Similarly, if mining were to occur outside of the alluvial valley floor, then mining and reclamation would be completed in a manner to minimize disturbances to the hydrologic balance by preserving the essential hydrologic functions. This criterion is not applicable.

Criterion 20

Summary of the Criterion: Federal lands in a state to which is applicable a criterion (i) proposed by the state or Indian tribe located in the planning area, and (ii) adopted by rulemaking by the Secretary, shall be considered unsuitable.

The State of Utah has adopted unsuitability criteria under rule R645-103-300, Utah Criteria for Designating Areas as Unsuitable for Coal Mining and Reclamation Operations. The criteria are similar to the Federal criteria at 43 CFR 3461, which are addressed in this report.

The coal resources that are assessed in this report are not located on tribal lands. An Indian tribe has not proposed or adopted any criteria for coal mining unsuitability that would be applicable to the subject Federal lands.

SUMMARY OF THE UNSUITABILITY EVALUATION

The coal resources with development potential in the Henry Mountains coal field have been evaluated in consideration of the 20 unsuitability criteria. Based on the criteria, the coal resources which are considered suitable for leasing are shown on Map 8. Coal resources have been determined to be unsuitable for leasing, based on Criteria 4 (WSAs) and 9 (T&E plants). The coal resources criteria were applied to Federal land only. The summary of acreage by land ownership is identified in Table A8-31.

Table A8-31. Acreage of Minable Coal Resources

Land Status	Surface Methods	Underground Methods
BLM	4,683	41,842
NPS	0	0

Only Federal surface estate is included in the above totals, since the criteria only apply to Federal lands. Some split estate (private surface and Federal minerals) may not be reflected in the above total, since the GIS data base does not include such information. There is not a significant acreage of split estate in the Henry Mountains coal field.

MAPS FOR HENRY MOUNTAINS COAL UNSUITABILITY EVALUATION

Map 1 – Location

Map 2 – Land Ownership

Map 3 – Rights of Way

Map 4 – Wilderness Study Areas

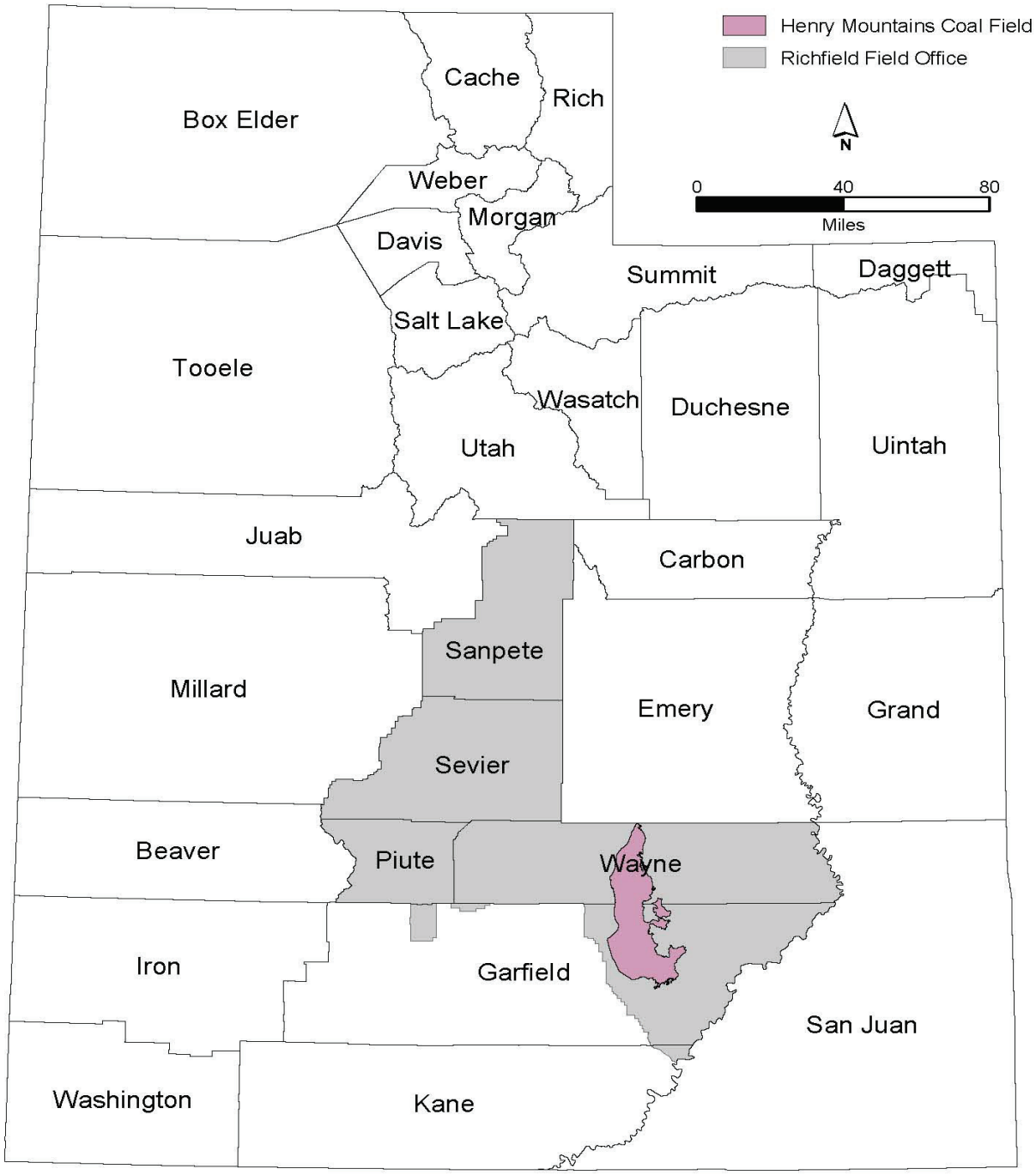
Map 5 – Threatened and Endangered Species

Map 6 – Deer Habitat

Map 7 – Bison Habitat

Map 8 – Henry Mountains Coal Suitability

Map 1 - General Location Map



1

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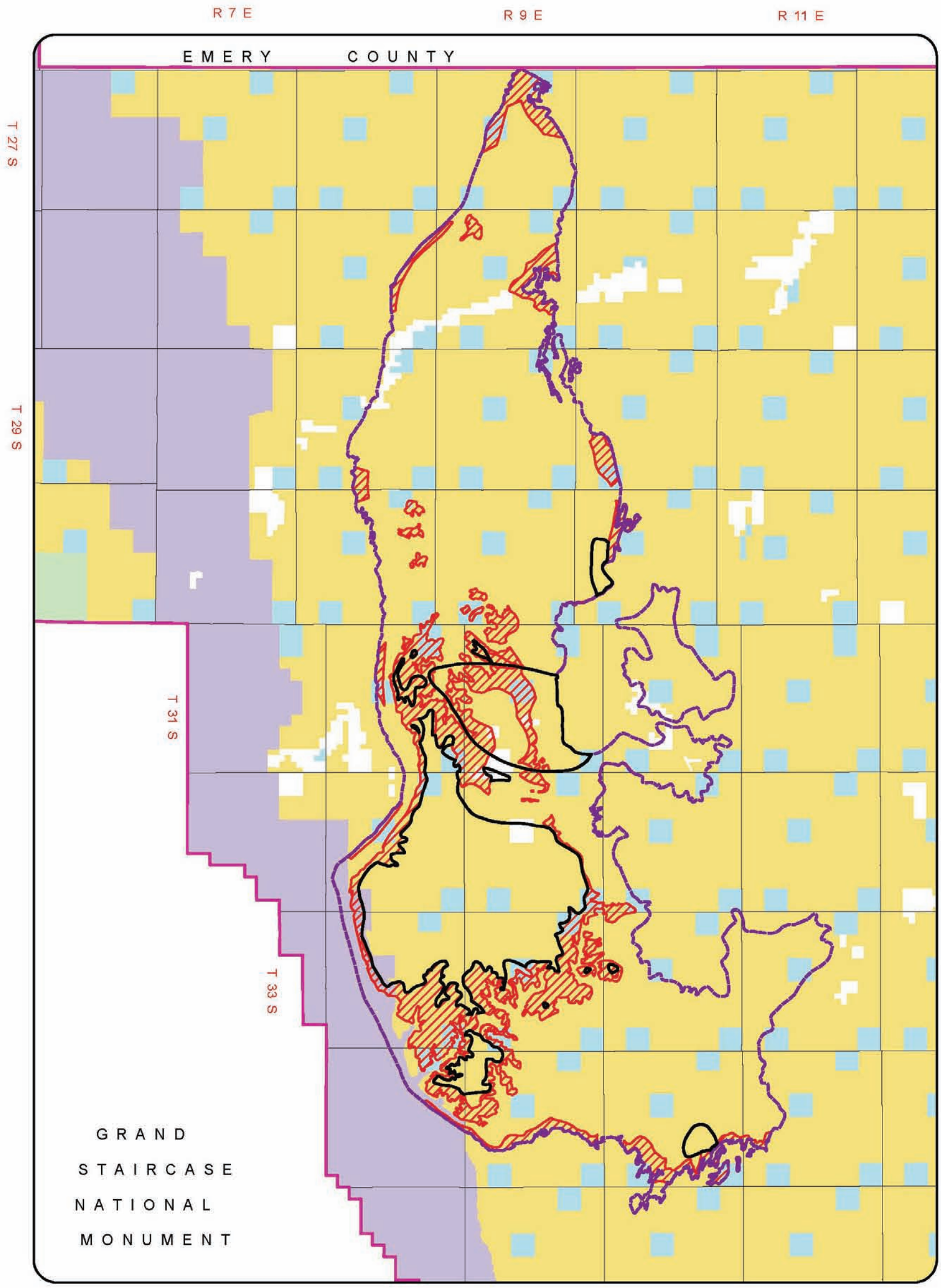
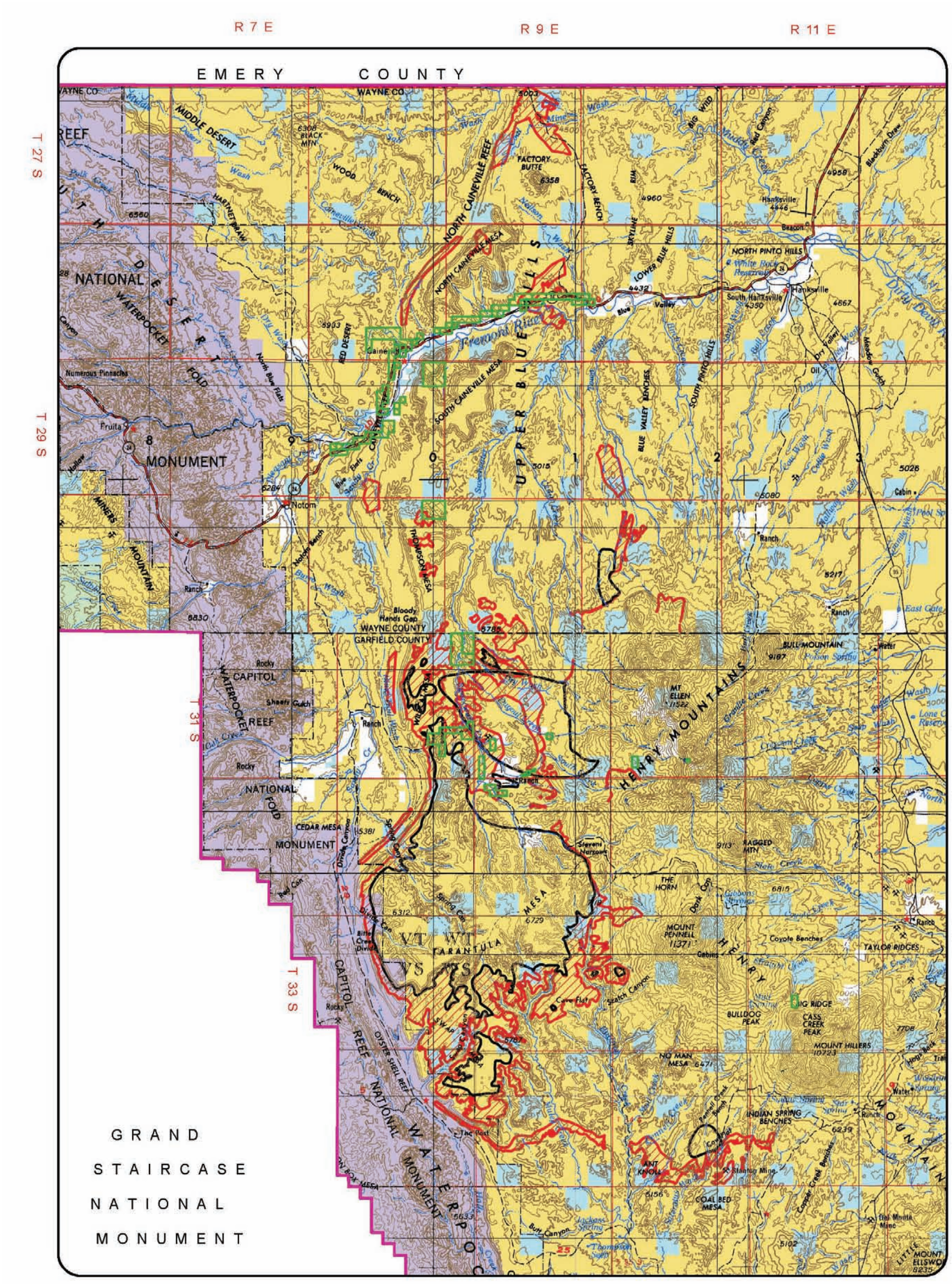
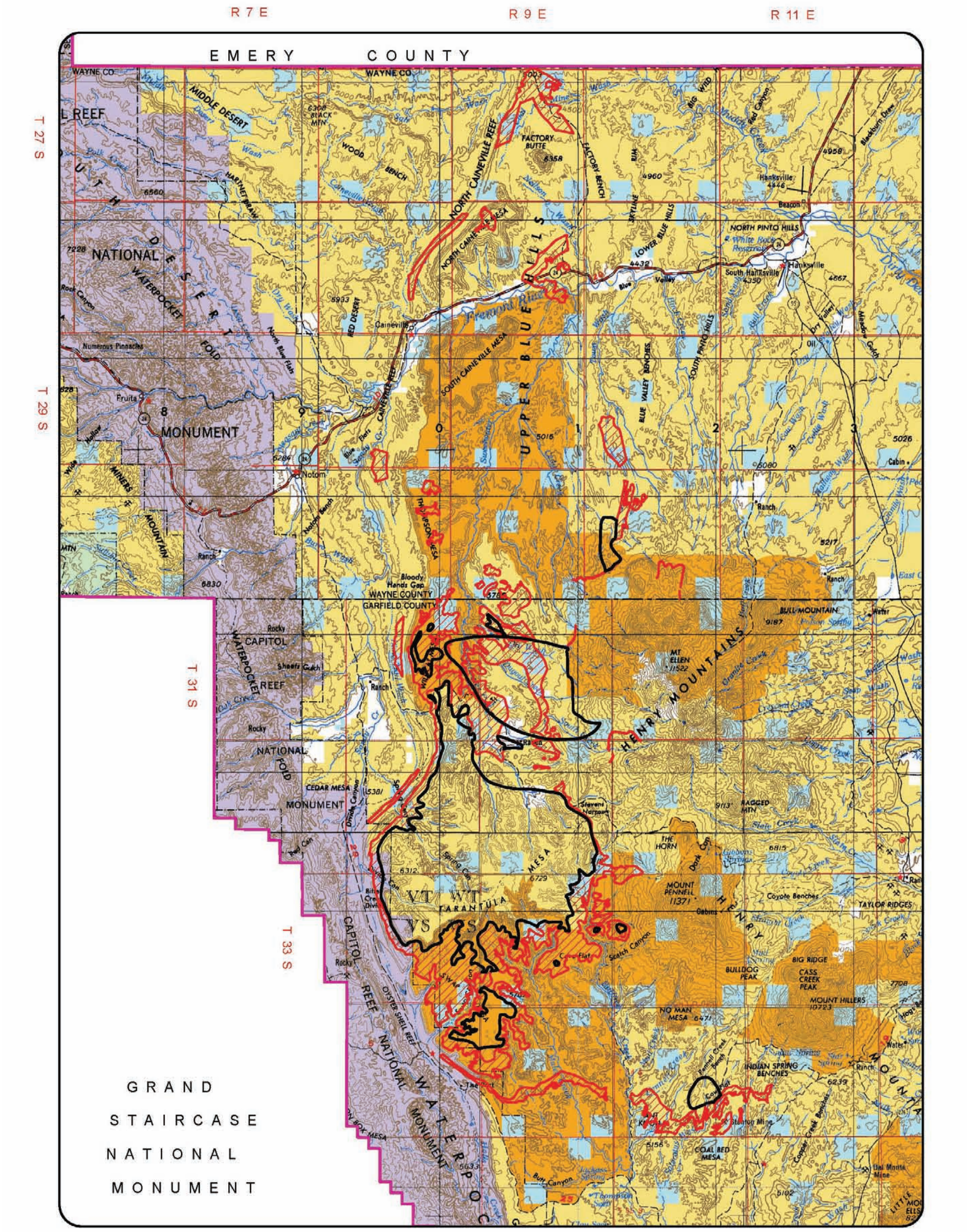

R 7 E
R 9 E
R 11 E
EMERY COUNTY
T 27 S
T 29 S
T 31 S
T 33 S
GRAND STAIRCASE NATIONAL MONUMENT
Surface Mineable Coal
Underground Mineable Coal
Henry Mtns. Coal Field
BLM
National Park Service
State
Private
Coal Unsuitability Report - Henry Mtns. Coal Field
Map 2 - Land Status
N
0
4
8
Miles
SCALE 1:250,000
Bureau of Land Management
Richfield Field Office
August 4, 2004



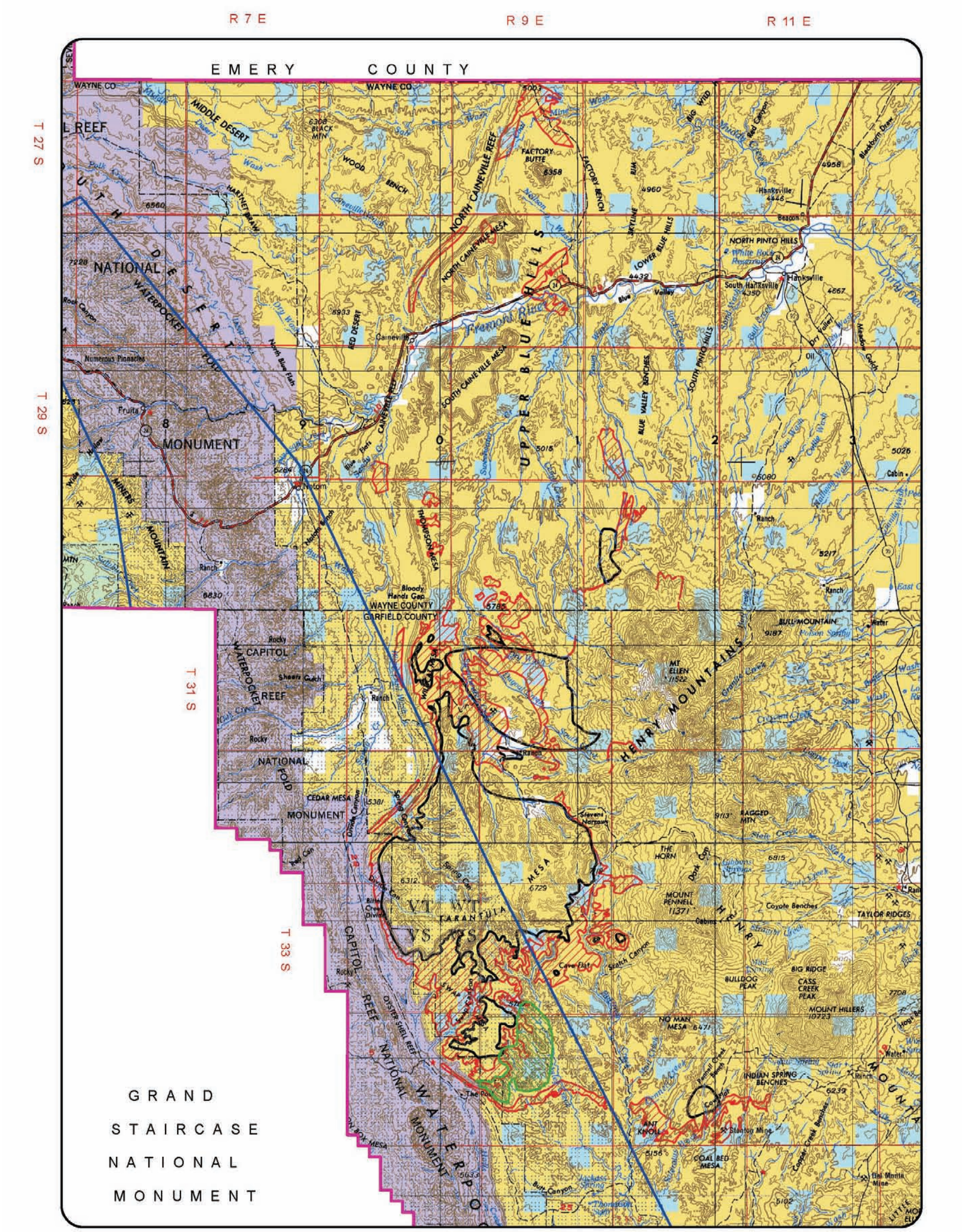
Coal Unsuitability Report - Henry Mtns. Coal Field
Map 3 - Rights of Way (Criterion 2)

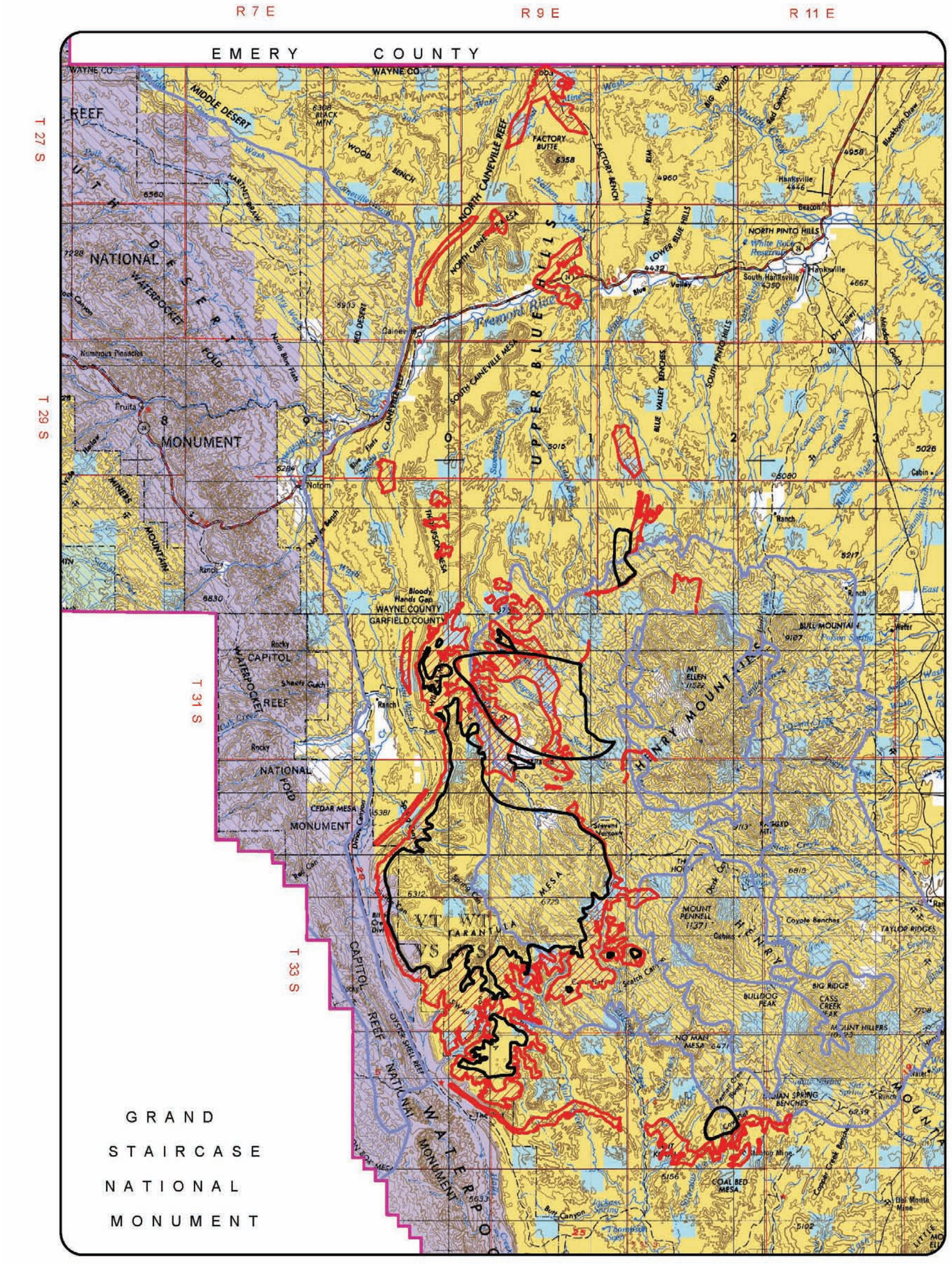
Bureau of Land Management
Richfield Field Office
August 4, 2004



Coal Unsuitability Report - Henry Mtns. Coal Field
Map 4 - WSA's and VRM Class I (Criteria 4 & 5)

Bureau of Land Management
Richfield Field Office
August 4, 2004


R 7 E
R 9 E
R 11 E
T 27 S
T 29 S
T 31 S
T 33 S
EMERY COUNTY
WAYNE CO
WAYNE COUNTY
GARFIELD COUNTY
NATIONAL WATERPOCKET FOLD MONUMENT
WATERPOCKET FOLD
CAPITOL REEF NATIONAL MONUMENT
GRAND STAIRCASE NATIONAL MONUMENT
NORTH CAINEVILLE REEF
SOUTH CAINEVILLE MESA
UPPER BLUE HILLS
LOWER BLUE HILLS
NORTH PINTO HILLS
SOUTH PINTO HILLS
BLUE BENCHES
BLUE VALLEY
FACTORY BUTTE
FACTORY BENCH
WOOD BENCH
RED DESERT
MIDDLE DESERT
THOMPSON MESA
HENRY MOUNTAINS
MT ELLEN
BULL MOUNTAIN
RAGGED MTN
THE HORN
MESA
MOUNT PENNELL
MOUNT HILLERS
NO MAN MESA
COAL BED MESA
ANT KNOLL
INDIAN SPRING BENCHES
COPPER CREEK BENCHES
TAYLOR RIDGES
BULLDOG PEAK
CASS CREEK PEAK
BIG RIDGE
Fremont River
Caineville
Fruita
Notom
Hanksville
Bloody Hands Gap
Numerous Pinnacles
Rock Canyon
Oyster Shell Reef
Cave Flat
Scratch Canyon
Stanton Mine
Dal Monte Mine
Coyote Benches
Mexican Spotted Owl Constituent Elements
Mexican Spotted Owl Designated Critical Habitat
Surface Mineable Coal
Underground Mineable Coal
BLM
National Park Service
State
Private
Coal Unsuitability Report - Henry Mtns. Coal Field
Map 5 - Listed T&E Species (Criterion 9)
N
0 5 10
Miles
SCALE 1:250,000
Bureau of Land Management
Richfield Field Office
August 4, 2004



Coal Unsuitability Report - Henry Mtns. Coal Field
Map 6 - Mule Deer Crucial Habitat (Criterion 15)

Crucial Mule Deer Habitat
Surface Mineable Coal
Underground Mineable Coal

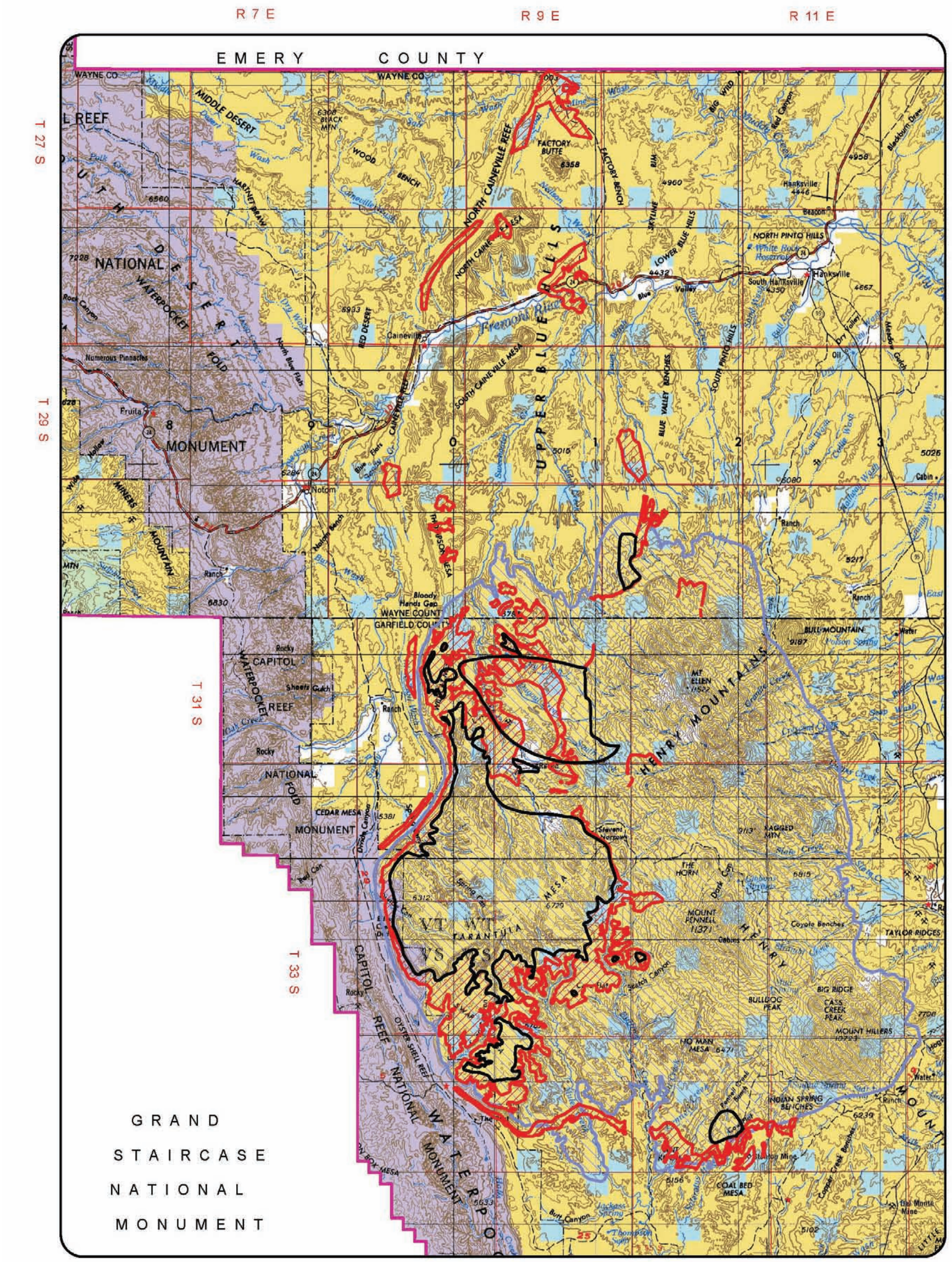
BLM
National Park Service
State
Private

N

0 5 10
Miles

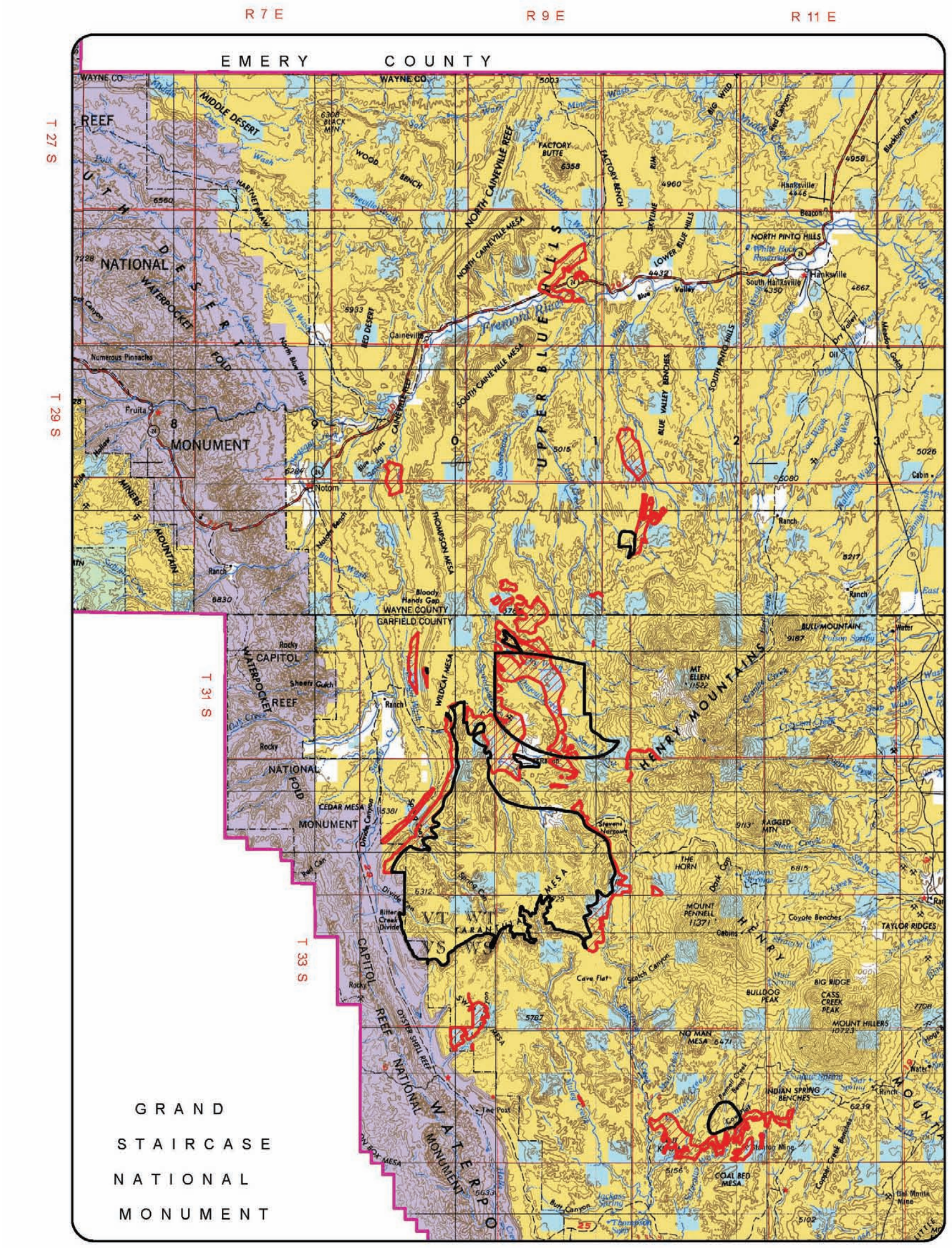
SCALE 1:250,000

Bureau of Land Management
Richfield Field Office
August 4, 2004



Coal Unsuitability Report - Henry Mtns. Coal Field
Map 7 - Crucial Bison Habitat (Criterion 15)

Bureau of Land Management
Richfield Field Office
August 4, 2004



Coal Unsuitability Report - Henry Mtns. Coal Field
Map 8 - Coal Resources Considered Suitable for Leasing

Surface Mineable Coal
Underground Mineable Coal

BLM
National Park Service
State
Private

N

0 5 10
Miles

SCALE 1:250,000

Bureau of Land Management
Richfield Field Office
August 4, 2004

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COAL UNSUITABILITY REPORT WASATCH PLATEAU AND EMERY COAL FIELDS

INTRODUCTION

The Bureau of Land Management (BLM) has the responsibility for implementing Federal regulations 43 CFR 3461, Federal Lands Review: Unsuitability for Mining. The general unsuitability criteria, the Federal land review, and the prohibitions against mining are derived from the applicable sections of the Surface Mining Control and Reclamation Act of 1977 [30 U.S.C. 1272(a), (b), (e)]. This review of coal unsuitability is in conjunction with the revision of the existing land use plan and the development of a Resource Management Plan for the Richfield Field Office.

As addressed at 43 CFR 3420.1-4, the Secretary of the Interior may not hold a lease sale of public land containing coal deposits, unless the land is subject to a comprehensive land use plan. Only those lands that have coal resources with development potential may be considered as acceptable for further consideration for leasing. The coal resources, which are evaluated for unsuitability, have been delineated in a report, Coal Resources of the BLM Richfield Planning Area (2003). The coal report identifies public land that has a coal resource that is to be considered for coal leasing through the land use planning.

This report addresses the unsuitability of the coal resources that have potential for development in the Wasatch Plateau and Emery coal fields. Following the identification of the coal resources with development potential, the Bureau of Land Management shall determine whether areas are unsuitable for all or certain stipulated methods of mining. The Department of the Interior has developed 20 criteria that are used for this determination, which are presented at 43 CFR 3461.5.

GEOLOGIC SETTING

The Wasatch Plateau coal field is on the eastern side of the Wasatch Plateau, whereas the Emery coal field overlaps the Wasatch Plateau and a portion of the Mancos Shale Lowland. The coal fields are elongated in a northeast direction.

The coal deposits in the Emery and Wasatch Plateau coal fields are Cretaceous in age. The Emery coal beds are in the Ferron Sandstone Member of the Mancos Shale and stratigraphically below the Wasatch Plateau coal beds which are in the Blackhawk Formation.

The Wasatch Plateau is an escarpment on the east side of the plateau, and the coal beds have gentle westward dips with local displacement by faulting. The Emery field is located to the east of and topographically lower than the Wasatch Plateau field.

LANDS CONSIDERED

The Emery and Wasatch Plateau coal fields are located in central Utah (Map 1). The Emery coal field is in Sevier, Emery, and Carbon Counties, whereas the Wasatch Plateau coal field is also in Sanpete County (Map 1). This unsuitability report addresses only the coal resources which have development potential in Sevier and Sanpete County (Map 2). The coal resources in these two counties are within the planning area for the Richfield Field Office, Bureau of Land Management.

Within the planning area, the Emery coal field includes Federal land that is managed by the Bureau of Land Management Richfield Field Office and the US Forest Service Fishlake National Forest. The Wasatch Plateau coal field includes Federal land that is managed by BLM Richfield Field Office, and the Fishlake and Manti-La Sal National Forests. Within the planning area, the Emery coal field contains 41,849 acres, and the Wasatch Plateau coal field contains 103,808 acres. The acreage of land with development potential for coal resources is given for each coal field in the subsequent Coal Resources Section.

Within the planning area, Federal coal leases are not currently authorized within the Emery coal field; There are currently seven Federal coal leases authorized within the Wasatch Plateau and none in the Emery coal field. Most of the approximately 23,937 acres under Federal coal leases, are within the boundaries of the Fishlake and Manti-LaSal National Forests (Map 2). The existing Federal coal leases (UTSL-0062583, UTU-028297, UTU- 047080, UTU-062453, UTU-0149084, UTU-063214, and UTU-076195) are not subject to this unsuitability review (43 CFR 3461.3-2).

Further reference in this report to coal fields and coal resources is only to the portions within the subject planning area.

COAL RESOURCES

The Emery coal field contains an estimated 303 million tons of in-place, unleased, minable coal resources; the Wasatch Plateau contains 415.8 million tons of in-place, unleased, minable coal resources (Tabet 2003, p. 41). These estimates include only coal beds of an average thickness of 6 feet or greater with less than 2,500 feet of overburden for underground mining and coal beds of a minimum thickness of a 4 feet and a maximum overburden of 100 feet for surface mining.

In the Emery field, approximately 11 million tons could be mined by surface methods and 292 million tons by underground methods. The coal resources in the Wasatch Plateau field could be mined by underground methods only.

Ownership of lands with coal resources that have development potential is summarized in Table A8-32 and Table A8-33 below.

Table A8-32. Emery Coal Field Coal Resources

Land Status	Surface Minable Acres	Underground Minable Acres
BLM	149	9,624
USFS	534	3,542
State	0	1,673
Private	28	1,164
Total	**711**	**16,003**

Table A8-33. Wasatch Plateau Coal Field Coal Resources

Land Status	Surface Minable Acres	Underground Minable Acres
BLM	0	0

Land Status	Surface Minable Acres	Underground Minable Acres
USFS	0	18,672
State	0	0
Private	0	3,956
Total	**0**	**22,628**

Split ownership of private surface and Federal minerals is not included in the above totals, due to limitations of the current GIS data base. The largest tract of split estate with Federal coal resources is in the vicinity of Acord Lakes. The unsuitability criteria are applied to Federal lands, as defined at 43 CFR 3400.0-5(o) and required by the regulations at 43 CFR 3461.2-1.

EVALUATION OF THE UNSUITABILITY CRITERIA

The coal resources with development potential are assessed for the unsuitability criteria as outlined at 43 CFR 3461.5. Underground mining of coal deposits is exempt from the criteria, where there would be no surface coal mining operations as stated at 3461.1(a). Surface mining operations include surface operations and surface impacts incident to an underground mine as defined at 43 CFR 3400.0-5(mm). In addition, at 43 CFR 3461.1(b), where underground mining will include surface operations and surface impacts on Federal lands to which a criterion applies, the lands shall be assessed as unsuitable unless an exception or exemption applies. Each criterion is subject to exceptions and/or exemptions as prescribed in the regulations.

As stated above, the criteria are applied to the Federal lands with coal resources that are identified as having development potential, not to all the coal deposits within the coal fields.

Criterion 1

Summary of the Criterion: All Federal lands included in the following land systems or categories shall be considered unsuitable: National Park System, National Wildlife Refuge System, National System of Trails, National Wilderness Preservation System, National Wild and Scenic Rivers System, National Recreation Areas, lands acquired with money derived from the Land and Water Conservation Fund, National Forests, and Federal lands in incorporated cities, towns, and villages.

Federal lands with coal resources with development potential are located within the Fishlake and Manti La-Sal National Forests (Map 2 and Table A8-32 and Table A8-33 above). An exception for leasing on National Forest is allowed, if:

> "* * * the Secretary finds no significant recreational, timber, economic or other values which may be incompatible with the lease; and (A) surface operations and impacts are incident to an underground coal mine, or (B) where the Secretary of Agriculture determines, with respect to lands which do not have significant forest cover within those National Forests west of the 100th Meridian, that surface mining may be in compliance with Multiple-Use Sustained Yield Act of 1960, the Federal Coal Leasing Amendments of 1976 and the Surface Mining Control and Reclamation Act of 1977."

The USFS has determined that no significant recreational, timber, economic or other values which may be incompatible with the lease are present within both National Forests. The coal resources that have

development potential by underground methods meet the underground exemption, and any associated surface operations and impacts meet the above exception. Coal resources within the Fishlake National Forest at T. 25 S., R. 4 E. that have development potential by surface mining methods would meet the exception, since significant forest cover is not present and coal mining would be in compliance with the stated laws.

Criterion 2

Summary of the Criterion: Federal lands that are within rights-of-way or easements or within surface leases for residential, commercial, industrial, or other public purposes, on Federally-owned surface shall be considered unsuitable.

Within the Emery coal field, several authorized rights-of-way encompass BLM-administered, Federal lands with coal resources which have development potential (Map 3). These are listed in Table A8-34 below.

Table A8-34. BLM-Administered, Authorized Rights-of-Way within Emery Coal Field

Serial Number	Holder	Legal Description	Type	Acres (ac) or Width (ft)
UTSL-0062677	Federal Highway Administration	T. 23 S., R. 5 E., Sec. 1, 11, 12, 14, 22, 27	Highway	400 ft
UTSL-0062873	Federal Highway Administration	T. 23 S., R. 5 E., Sec. 27, 34	Highway	400 ft
UTU-008966	Federal Highway Administration	T. 23 S., R. 5 E., Sec. 33, 34, 35 T. 24 S., R. 5 E., Sec. 3	Highway	400 ft
UTU-043522	Sevier County	T. 23 S., R. 5 E., Sec. 11, 12, 13	Road	100 ft
UTU- 0107441	Federal Highway Administration	T. 23 S., R. 5 E., Sec. 25	Material Site	166 ac
UTU- 0110883	Federal Highway Administration	T. 23 S., R. 5 E., Sec. 25, 26, 35	Highway	500 ft
UTU- 0136803	Federal Highway Administration	T. 23 S., R. 5 E., Sec. 25	Material Site	203 ac
UTU- 072941	Sevier County	T. 24 S., R. 5 E., Sec. 13	Road	45 ft
UTU- 057036	Federal Highway Administration	T. 25 S., R. 5 E., Sec. 6	Highway	200 ft

This criterion is subject to exceptions. A lease may be issued and mining operations approved, in such areas, if the surface management agency determines that:

- All or certain types of coal development (e.g., underground mining) will not interfere with the purpose of the rights-of-way or easement, or
- The right-of-way or easement was granted for mining purposes,
- The right-of-way or easement was issued for a purpose for which it is not being used,
- The parties involved in the right-of-way or easement agree, in writing, to leasing,

- It is impractical to exclude such areas due to the location of coal and method of mining and such areas or used can be protected through appropriate stipulations.

All the above-listed rights-of-way on BLM-administered lands are subject to development by underground mining, and right-of-way UTU-72941 is also subject to surface mining. Mining by underground methods is exempt and should not interfere with the intended use of a right-of-way facility. Where there could be surface operations and surface impacts associated with underground mining, the impacts would be mitigated, subject to an agreement with the right-of-way holder at the time of a specific leasing proposal. Where the coal resources would be mined by surface methods, the right-of-way facility could be moved during the mining operations and re-located when the land is reclaimed, again, subject to an agreement with the right-of-way holder. The Federal lands subject to the above rights-of-way are considered suitable.

There are no current rights-of-way or easements on NFS lands considered in this report.

The existing coal leases on the Fishlake National Forest are exempt from this criterion.

Criterion 3

Summary of the Criterion: The terms used in this criterion have their meaning set out in the Office of Surface Mining Reclamation and Enforcement regulations at Chapter VII of Title 30 of the Code of Federal Regulations. Federal lands affected by Section 522(e) (4) and (5) of the Surface Mining Control and Reclamation Act of 1977 shall be considered unsuitable. This includes lands within 100 feet of the outside line of a right-of-way of a public road, within 100 feet of a cemetery, or within 300 feet of any public building, school, church, community or institutional building, public park or occupied dwelling.

Exceptions are allowed, if a lease may be issued for lands:

- Used as mine access roads or haulage roads that join the right-of-way for a public road;
- For which the Office of Surface Mining Reclamation and Enforcement has issued a permit to have public roads relocated;
- If, after public notice and opportunity for public hearing in the locality, a written finding is made by the authorized officer that the interests of the public and the landowners affected by mining within 100 feet of a public road will be protected;
- For which owners of occupied dwellings have given written permission to mine within 300 feet of their buildings.

The subject coal lands do not fall within the stated distances of a cemetery, public building, school, church, community or institutional building, or public park.

BLM-administered, Federal lands with development potential for coal resources are located within 100 feet of the rights-of-way for a road or highway, which are listed under Criterion 2. The listed road and highway rights-of-way are subject to underground mining methods, and the right-of-way UTU- 072941 is also subject to surface mining. Mining by underground methods is exempt from this review. Where the coal resources would be mined by surface methods or a surface operation or impact would be associated with underground mining, the coal would only be leased in compliance with the Office of Surface Mining Reclamation and Enforcement and following a public notice and hearing. The Federal lands within 100 feet of road or highway rights-of-way, as listed under Criterion 2, are considered suitable for leasing under this Criterion.

Occupied dwellings are located at T. 22 S., R. 4 E., at Acord Lakes on private surface estate and Federal coal estate. This land would be developed by underground mining methods, and as stated previously, underground mining is exempt from this review, except for surface operations and impacts. Under the exception for this criterion, written permission is required from the owner of an occupied dwelling if surface operations of coal mining are within 300 feet of the occupied dwelling. If surface operations associated with the underground mining are necessary within the 300-foot distance, then that will be addressed as an impact at the time of leasing, and permission from the affected landowner(s) will be sought. However, it is likely that the design of a mine would involve locating surface facilities and impacts on unoccupied lands.

A dwelling is also located at T. 25 S., R. 4 E., Section 22 NE¼SE¼ at Paradise Valley on private land. This structure is more than 300 feet from the identified lands with a potentially developable coal resource as determined from the USGS Geyser Peak 7.5 minute topographic quadrangle (scale 1:24,000).

Criterion 4

Summary of the Criterion: Federal lands designated as wilderness study areas shall be considered unsuitable while under review by the Administration and the Congress for possible wilderness designation.

None of the subject Federal lands are presently within designated wilderness study areas. Some lands administered by the U.S. Forest Service are however being evaluated (inventoried) to determine if those lands have the characteristics of a wilderness study area. In accordance with the criterion, for any Federal land which is to be leased or mined prior to completion of the wilderness inventory by the surface management agency, the environmental assessment or impact statement on the lease sale or mine plan shall consider whether the lands have the characteristics of a wilderness study area. If the finding is affirmative, the land shall be considered unsuitable, unless issuance of noncompetitive coal leases and mining on leases is authorized under the Wilderness Act and the Federal Land Policy and Management Act of 1976 (FLPMA).

None of the subject Federal lands are within a designated wilderness study area.

Criterion 5

Summary of the Criterion: Scenic Federal lands designated by visual resource management analysis as Class I (an area of outstanding scenic quality or high vessel sensitivity) but not currently on the National Register of Natural Landmarks shall be considered unsuitable.

None of the BLM-administered Federal lands are presently located within areas designated as visual resource management Class I, and none of the National Forest lands are presently located within areas designated as visual resource management Class A, which is equivalent to Class I in the BLM classification. Therefore, this criterion is not applicable to the subject lands.

Criterion 6

Summary of the Criterion: Federal lands under permit and being used for scientific studies involving food or fiber production, natural resources, or technology demonstrations and experiments shall be considered unsuitable for the duration of the study.

None of the subject lands are under permit for the described scientific studies. This criterion is not applicable to the subject lands.

Criterion 7

Summary of the Criterion: All publicly or privately owned places which are included in the National Register of Historic Places shall be considered unsuitable.

Presently, there are no listed sites on the subject lands that are included on the National Register of Historic Places. This criterion is not applicable. Any subsequently listed sites and eligible sites will be further evaluated at the time of leasing.

Criterion 8

Summary of the Criterion: Federal lands designated as natural areas or as National Natural Landmarks shall be considered unsuitable.

None of the subject lands are designated as a National Natural Landmark.

Criterion 9

Summary of the Criterion: Federally designated critical habitat for listed threatened or endangered plant and animal species, habitat proposed to be designated as critical for listed threatened or endangered plant and animal species or species proposed for listing, and habitat for Federal threatened or endangered species which is determined by the Fish and Wildlife Service and the surface management agency to be of essential value and where the presence of threatened or endangered species has been scientifically documented, shall be considered unsuitable.

Based upon data currently available, the Federal lands do not meet the guidelines for this criterion. Surveys have been completed in these areas for several other projects. No listed threatened or endangered plant or animal species have been definitely found. No critical habitat is presently designated on the subject lands. Therefore, this criterion does not apply to the subject lands. Subsequently designated critical habitat, proposed critical habitat, and essential-value habitat will be further evaluated at the time of leasing.

Criterion 10

Summary of the Criterion: Federal lands containing habitat determined to be critical or essential for plant or animal species listed by a state, pursuant to state law, as endangered or threatened shall be considered unsuitable.

The State of Utah has not listed any plant species as endangered or threatened, pursuant to State law. Therefore, the criterion does not apply to plant species. The State has listed endangered or threatened animal species, but these are the same as the Federally listed animal species. The State of Utah recognizes the Federal listings and habitat designations. As stated in Criterion 9, no listed endangered or threatened animal species have been found. No critical habitat has presently been designated which on subject lands with coal resources. Therefore, the criterion does not apply to the subject lands. Subsequently designated critical habitat and essential-value habitat will be further evaluated at the time of leasing.

Criterion 11

Summary of the Criterion: A bald or golden eagle nest or site on Federal lands that is determined to be active, including an appropriate buffer zone of land around the nest site, shall be considered unsuitable. Consideration of availability of habitat of prey species and of terrain shall be included in the determination. Buffer zones shall be determined in consultation with the Fish and Wildlife Service.

Eagle nests are not known to be present on the subject lands, therefore this criterion does not apply. If nests or sites are found at the time of leasing, then consultation will occur with the U.S. Fish and Wildlife Service and appropriate mitigations as outlined in the RMP will be applied. The subject Federal lands will be subject to inventory and site-specific analysis at the time of leasing.

Criterion 12

Summary of the Criterion: Bald or golden eagle roost and concentration areas on Federal lands used during migration and wintering shall be considered unsuitable.

Eagle roosts are not known to be present on the subject Federal lands, therefore this criterion does not apply. If roosts or concentration areas are found at the time of leasing, then consultation will occur with the U.S. Fish and Wildlife Service and appropriate mitigations as outlined in the RMP will be applied.

Criterion 13

Summary of the Criterion: Federal lands containing a falcon (excluding kestrel) cliff nesting site with an active nest and including a buffer zone of Federal land around the nest site shall be considered unsuitable. Consideration of availability of habitat for prey species and of terrain shall be included in the determination of buffer zones. Buffer zones shall be determined in consultation with the Fish and Wildlife Service.

Active falcon nesting sites are not known to be present on the subject Federal lands, therefore this criterion does not apply to the subject lands. If active nesting sites are found at the time of leasing, then consultation will occur with the U.S. Fish and Wildlife Service and appropriate mitigations as outlined in the land use plan will be applied.

Criterion 14

Summary of the Criterion: Federal lands which are high priority habitat for a migratory bird species of high Federal interest on a regional or national basis, as determined by the surface management agency and the Fish and Wildlife Service, shall be considered unsuitable.

High priority habitat for migratory birds overlaps a portion of the underground minable coal resource in the vicinity of Old Woman Plateau. The acreage involved is 2,048. The exemption for underground mining applies to this habitat; however surface operations and surface impacts may be unsuitable or be mitigated at the time of leasing. The Federal lands will be subject to inventory and site-specific analysis at the time of leasing.

Criterion 15

Summary of the Criterion: Federal lands which the surface management agency and state jointly agree are habitat for resident species of fish, wildlife, and plants of high interest to the state and which are

essential for maintaining these priority wildlife and plant species shall be considered unsuitable. Examples of such lands include:

- Active dancing and strutting grounds for sage grouse,
- Winter ranges crucial for deer, antelope, and elk,
- Migration corridor for elk, and
- Extremes of range for plant species.

A lease may be issued if, after consultation with the state, the surface management agency determines that all or certain stipulated methods of coal mining will not have a significant long-term impact on the species being protected.

Underground mining is exempt. Surface facilities associated with the coal mining could be located within the crucial habitat and could include a mine portal, buildings, and construction of roads. Haulage of mined coal would also be necessary. The location of these facilities and associated haulage could be located as to minimize or reduce the impact to the habitat. Surface operations and impacts would not have an adverse, long-term impact on the crucial habitats.

Crucial habitat for deer, elk, and black bear overlaps Federal lands with coal resources that would be mined by underground methods (Maps 5, 6, and 7). The coal resources that would be developed by underground mining on BLM and National Forest lands are exempt from this criterion. Surface operations and surface impacts that would be associated with this type of mining would not have a long-term effect on the species, as determined in consultation with the USFS and the Division of Wildlife Resources, State of Utah. Underground mining meets the exception of this criterion, and surface operations and surface impacts would be subject to a site-specific review as part of the consideration of an application to lease coal.

Crucial habitat for deer, elk, and black bear is present on the Fishlake National Forest at T. 25 S., R. 4 E., in an area that could be mined by surface methods (Maps 5, 6, and 7). The maximum area that would be surface mined would involve approximately 534 acres of National Forest lands. If surface mining were to occur, the mining would probably be completed in stages, or mining units, with mining in one area while an adjacent, previously mined-out area would be reclaimed to restore the crucial habitat. Thus, with concurrent mining and reclamation, surface mining would not impact all the acreage within a given lease at one time. Also, all the above land with an identified potential for surface mining may not be developed, because the coal reserves that would support a mine could be less than the currently identified coal resource. However, this land that could have surface mining is unsuitable, as determined in consultation with the USFS and the Division of Wildlife Resources, State of Utah.

Crucial habitat for deer and elk is present on BLM-administered lands at T. 24 S., R. 5 E. that could be mined by surface methods (Maps 5 and 6). The surface minable coal resource is approximately 149 acres. Whereas, the elk habitat only partially overlaps the surface minable coal, the deer habitat encompasses all of the land with the surface minable coal resource. The surface minable coal resource at this location is considered unsuitable, as determined in consultation with the USFS and the Division of Wildlife Resources, State of Utah.

The existing Federal leases are exempt from this criterion.

Criterion 16

Summary of the Criterion: Federal land in riverine, coastal and special floodplains (100-year recurrence interval) on which the surface management agency determines that mining could not be undertaken

without substantial threat of loss of life or property shall be considered unsuitable for all or certain stipulated methods of coal mining.

None of the subject lands are on lands where mining would result in substantial loss of life or property. Therefore, this criterion is not applicable.

Criterion 17

Summary of the Criterion: Federal lands which have been committed by surface management agency to use as municipal watersheds shall be considered unsuitable.

None of the subject lands with coal resource that has potential for development are within a municipal watershed. Therefore this criterion is not applicable.

Criterion 18

Summary of the Criterion: Federal lands with National Resource Waters, as identified by states in their water quality management plans including a buffer zone of Federal lands ¼ mile from the outer edge of the water bodies shall be considered unsuitable.

The State of Utah considers National Resource Waters as High Quality Waters (State Code R317-2-12). High Quality Waters are considered to be all surface waters geographically located within the boundaries of National Forests and certain designated stream channels or basins. Underground minable coal resources are exempt from this criterion. An exception to this criterion may be granted when the surface management agency determines that a buffer zone is unnecessary.

Surface streams cross many of the coal resource tracts in the Wasatch Plateau within the National Forests (Map 8). These National Forest System lands have development potential by underground mining. A coal resource at T. 25 S., R. 4 E. has potential by surface mining. Surface mining and surface operations and surface impacts that could be associated with underground mining would be subject to site-specific analysis and the consideration of buffers as mitigation at the time of leasing; therefore, impacts to High Quality Waters could be mitigated at the time of leasing.

None of the coal resources with development potential on BLM land are classified as High Quality Waters by the State. Therefore, the coal resources with development potential on BLM land are considered available for leasing under this criterion.

Criterion 19

Summary of the Criterion: Federal lands identified by the surface management agency, in consultation with the state in which they are located, as alluvial valley floors according to the definition in §3400.0-5(a) of this title, the standards in 30 CFR 822, the final alluvial valley floor guidelines of the Office of Surface Mining Reclamation and Enforcement when published, and approved state programs under the Surface Mining Control and Reclamation Act of 1977, where mining would interrupt, discontinue, or preclude farming, shall be considered unsuitable. Additionally, when mining Federal land outside an alluvial valley floor would materially damage the quantity or quality of water in the surface or underground water systems that would supply alluvial valley floors, the land shall be considered unsuitable.

No alluvial valley floors occur on lands, considered in this report and there are no known conflicts between minable land and farming land. Impacts to water quality can be addressed at the time of

evaluating specific mining proposals and can be mitigated at that time. Therefore, this criterion is not applicable.

Criterion 20

Summary of the Criterion: Federal lands in a state to which is applicable a criterion (i) proposed by the state or Indian tribe located in the planning area, and (ii) adopted by rulemaking by the Secretary, shall be considered unsuitable.

The State of Utah under State rule, R645-103-300, Utah Criteria for Designating Areas as Unsuitable for Coal Mining and Reclamation Operations, has developed unsuitability criteria, which are similar to the Federal criteria at 43 CFR 3461 as addressed in this report. No Indian tribe has proposed a criterion for coal mining unsuitability. Therefore, this criterion is not applicable at this time.

SUMMARY OF THE UNSUITABILITY EVALUATION

The coal resources with development potential in the Emery and Wasatch Plateau coal fields have been evaluated in consideration of the 20 unsuitability criteria. Based on the criteria, the coal resources which could be developed by surface mining methods in the Emery coal field at T. 25 S., R. 4 E., on the Fishlake National Forest and at T. 24 S., R. 5 E. on the BLM are considered to be unsuitable for leasing. Thus, 534 acres on the National Forest and the 149 acres on BLM would not be available for coal leasing. The other coal resources within Sanpete and Sevier Counties with development potential by underground methods are considered suitable for leasing (Map 9). The acreage considered suitable for the consideration of leasing of Federal coal resources is listed below in Table A8-35 and Table A8-36.

Table A8-35. Emery Coal Field Federal Coal Resources

Land Status	Surface Minable Acres	Underground Minable Acres
BLM	149	9,624
USFS	534	3,542
Total	**683**	**13,166**

Table A8-36. Wasatch Plateau Coal Field Federal Coal Resources

Land Status	Surface Minable Acres	Underground Minable Acres
USFS	0	18,672
Total	**0**	**18,672**

Private and state lands are not subject to the unsuitability criteria for Federal lands and are not included in the above totals.

MAPS FOR WASATCH PLATEAU AND EMERY COAL UNSUITABILITY

Map 1 – Location

Map 2 – Land Ownership

Map 3 – Rights-of-Way

Map 5 – Deer Habitat

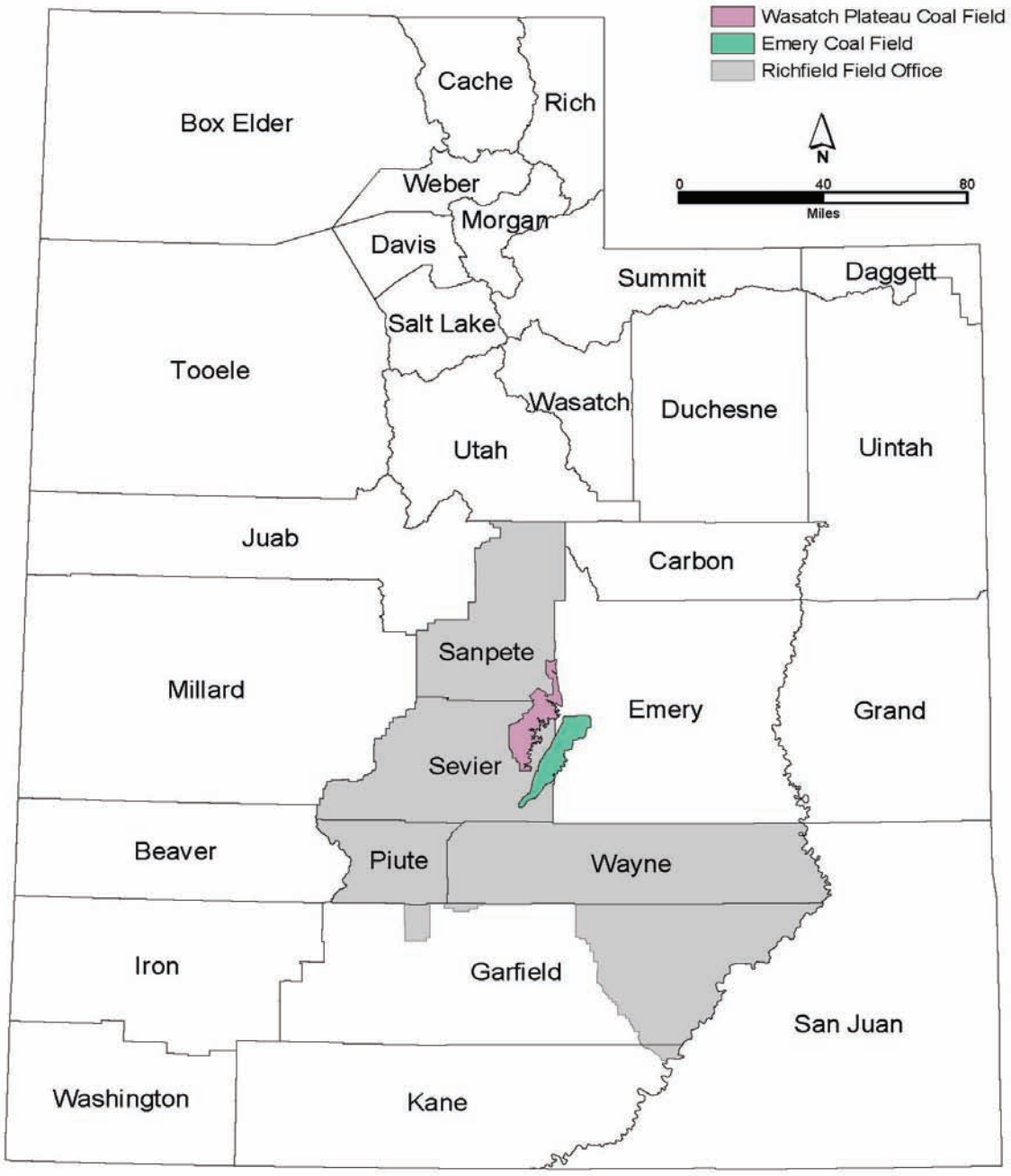
Map 6 – Elk Habitat

Map 7 – Bear Habitat

Map 8 – Natural Resource Waters

Map 9 – Coal Suitability

Map 1 - General Location Map



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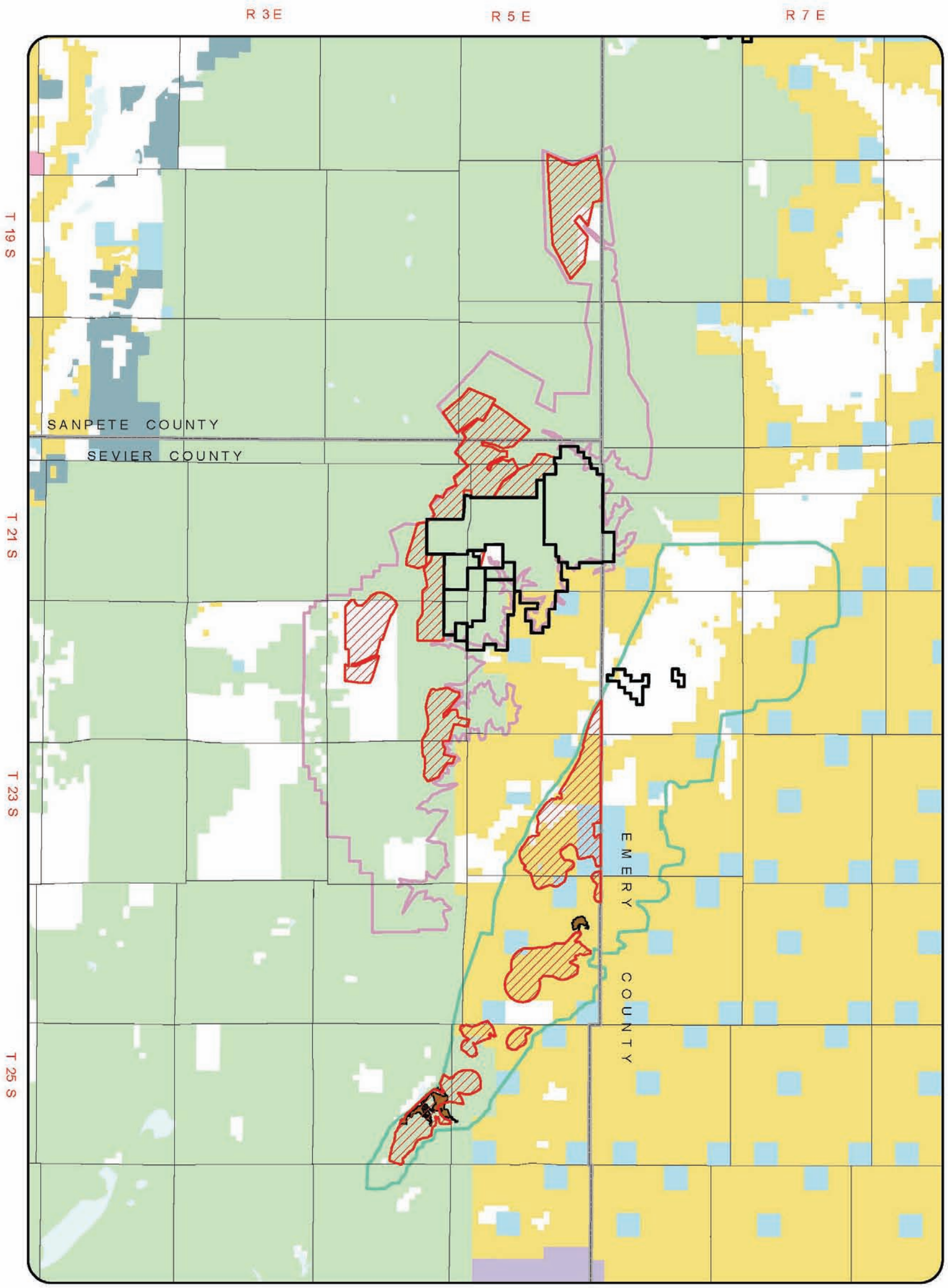

Coal Unsuitability Report - Emery and Wasatch Plateau Coal Fields
Map 2 - Land Status

Underground Mineable Coal
Surface Mineable Coal
Coal Leases
Wasatch Plateau Coal Field
Emery Coal Field

BLM
Forest Service
State
National Park
Private

Bureau of Land Management
Richfield Field Office
August 3, 2004

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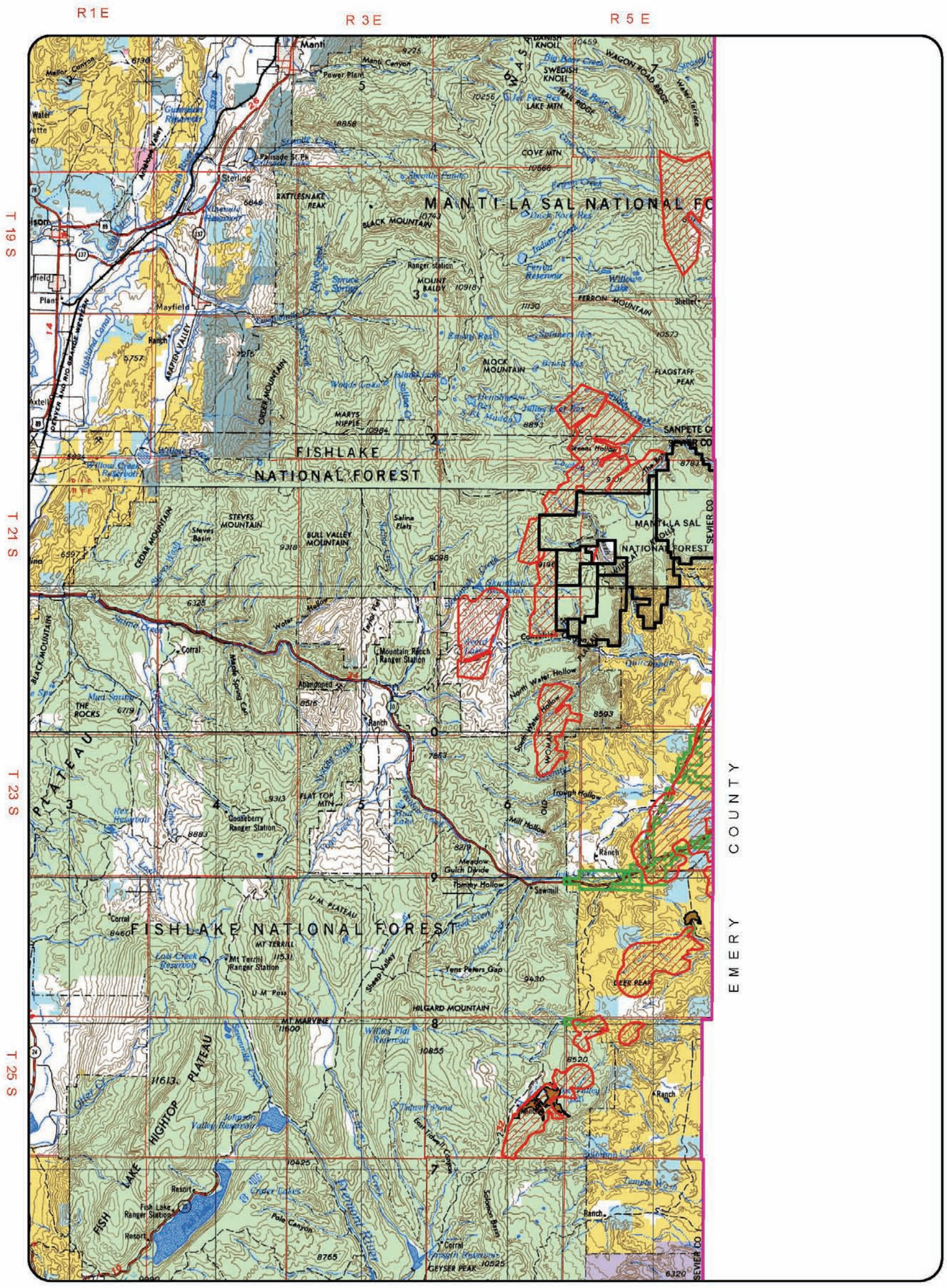
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EMERY COUNTY
MANTI-LA SAL NATIONAL FC
FISHLAKE NATIONAL FOREST
MANTI-LA SAL NATIONAL FOREST
Manti
Sterling
Mayfield
Axtell
Manti Canyon
Power Plant
Gunnison Reservoir
Arapien Valley
Sanpete Valley
Highland Canal
Sterling Canal
Palisade State Park
Palisade Lake
Sterling Creek
Spring Creek
Ephraim Canyon
Ephraim Creek
Indian Creek
Ferron Reservoir
Willowie Lake
Ranger station
Spinners Res.
Brush Res.
Julius Flat Res.
Emery Res.
Islands Lake
Wrigley Creek
Willow Creek Reservoir
Willow Creek
Order Mountain
Denver and Rio Grande Western
Mallor Canyon
Danish Knoll
Swedish Knoll
Wagon Road Ridge
Trail Ridge
Little Bear Creek
Big Bear Creek
Lake Mtn
Cove Mtn
Rattlesnake Peak
Black Mountain
Mount Baldy
Ferron Mountain
Flagstaff Peak
Block Mountain
Marys Nipple
Steves Mountain
Steves Basin
Bull Valley Mountain
Cedar Mountain
Salina Flats
Salina Creek
Mountain Ranch Ranger Station
Abandoned
Corral
Ranch
Mud Spring
The Rocks
Flat Top Mtn.
Gooseberry Ranger Station
Gooseberry Reservoir
Meadow Gulch Divide
Tommy Hollow
Sawmill
Trough Hollow
Mill Hollow
North Water Hollow
South Water Hollow
Mt Terrill
Mt Terrill Ranger Station
Lost Creek Reservoir
Yens Peters Gap
Deer Peak
Hilgard Mountain
Mt Marvine
Willow Flat Reservoir
Johnson Valley Reservoir
Fish Lake Ranger Station
Fish Lake
Resort
Pole Canyon
Otter Lakes
Geyser Peak
Solomon Basin
Tumpin Wash
Plateau
Hightop
U-M Plateau
U-M Pass
Coal Unsuitability Report - Emery and Wasatch Plateau Coal Fields
Map 3 - Rights of Way (Criterion 2)
Underground Mineable Coal
Surface Mineable Coal
Federal Coal Leases
Rights of Way
BLM
Forest Service
State
National Park
Private
Bureau of Land Management
Richfield Field Office
August 3, 2004
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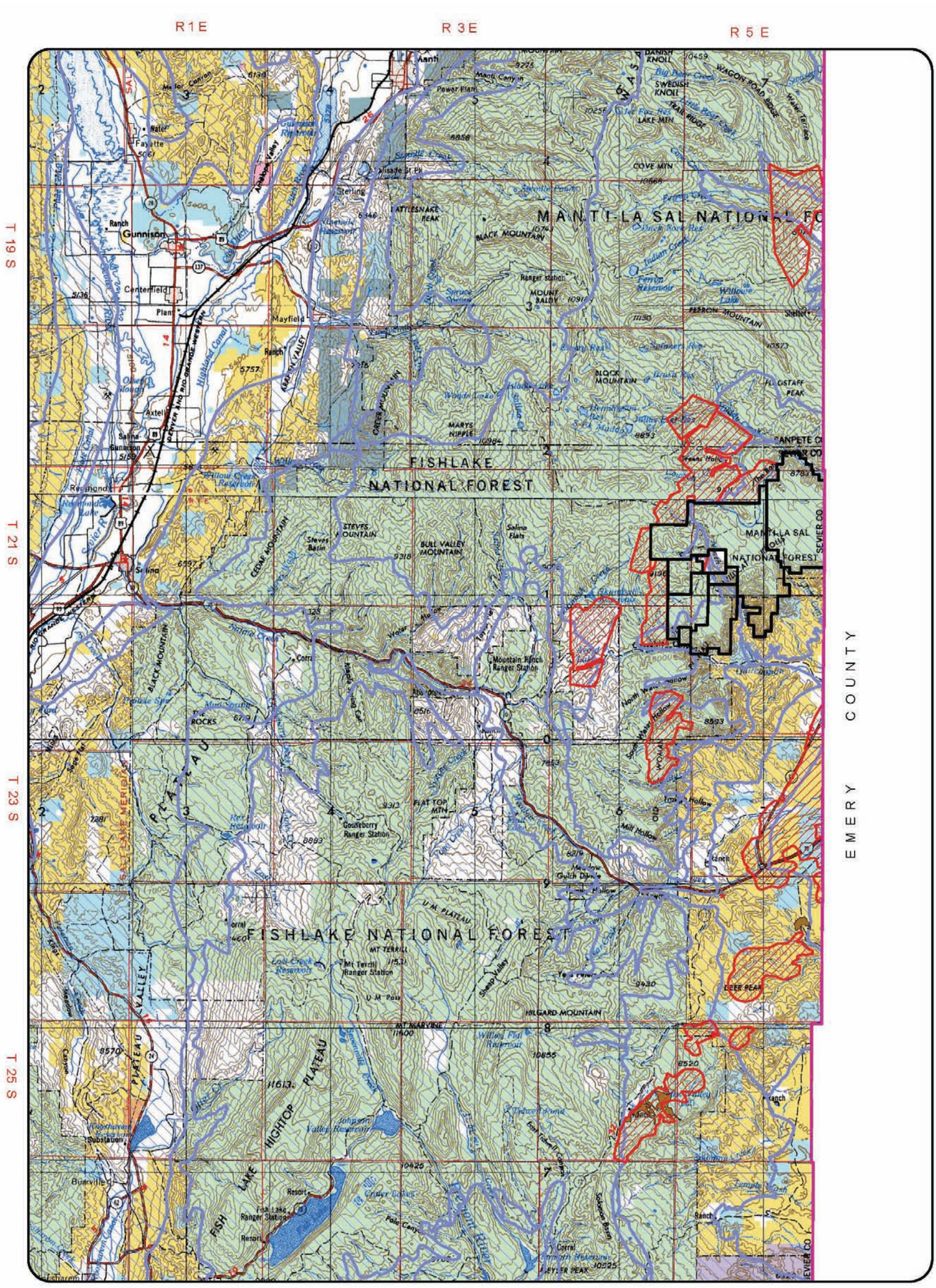
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EMERY COUNTY
MANTI-LA SAL NATIONAL FOREST
FISHLAKE NATIONAL FOREST
Gunnison
Centerfield
Mayfield
Axtel
Salina
Redmond
Aanti
Sterling
Fayette
Ranch
Power Plant
Manti Canyon
Ranger station
Gooseberry Ranger Station
Mt Terrill Ranger Station
Mountain Ranch Ranger Station
Fish Lake Ranger Station
Resort
Substation
Burrville
Corral
Spring
Reservoir
Canyon
Creek
Valley
Plateau
Mountain
Basin
Flats
Lake
Pass
Peak
Knoll
Hollow
Ridge
Meadow
Trail
Tank
Ranch
DANISH KNOLL
SWEDISH KNOLL
TRAIL RIDGE
LAKE MTN
COVE MTN
RATTLESNAKE PEAK
BLACK MOUNTAIN
MOUNT BALDY
FERRON MOUNTAIN
BLOCK MOUNTAIN
FLAGSTAFF PEAK
MARYS NIPPLE
CEDAR MOUNTAIN
STEVES MOUNTAIN
BULL VALLEY MOUNTAIN
FLAT TOP MTN
MT TERRILL
MT MARVINE
HILGARD MOUNTAIN
DEER PEAK
SALT LAKE MERIDIAN
ARAPEEN AND RIO GRANDE WESTERN
HIGHLAND CANAL
ARAPEEN VALLEY
SEVIER CO
Coal Unsuitability Report - Emery and Wasatch Plateau Coal Fields
Map 5 - Crucial Deer Habitat (Criterion 15)
Underground Mineable Coal
Surface Mineable Coal
Federal Coal Leases
Crucial Deer Habitat
BLM
Forest Service
State
National Park
Private
Bureau of Land Management
Richfield Field Office
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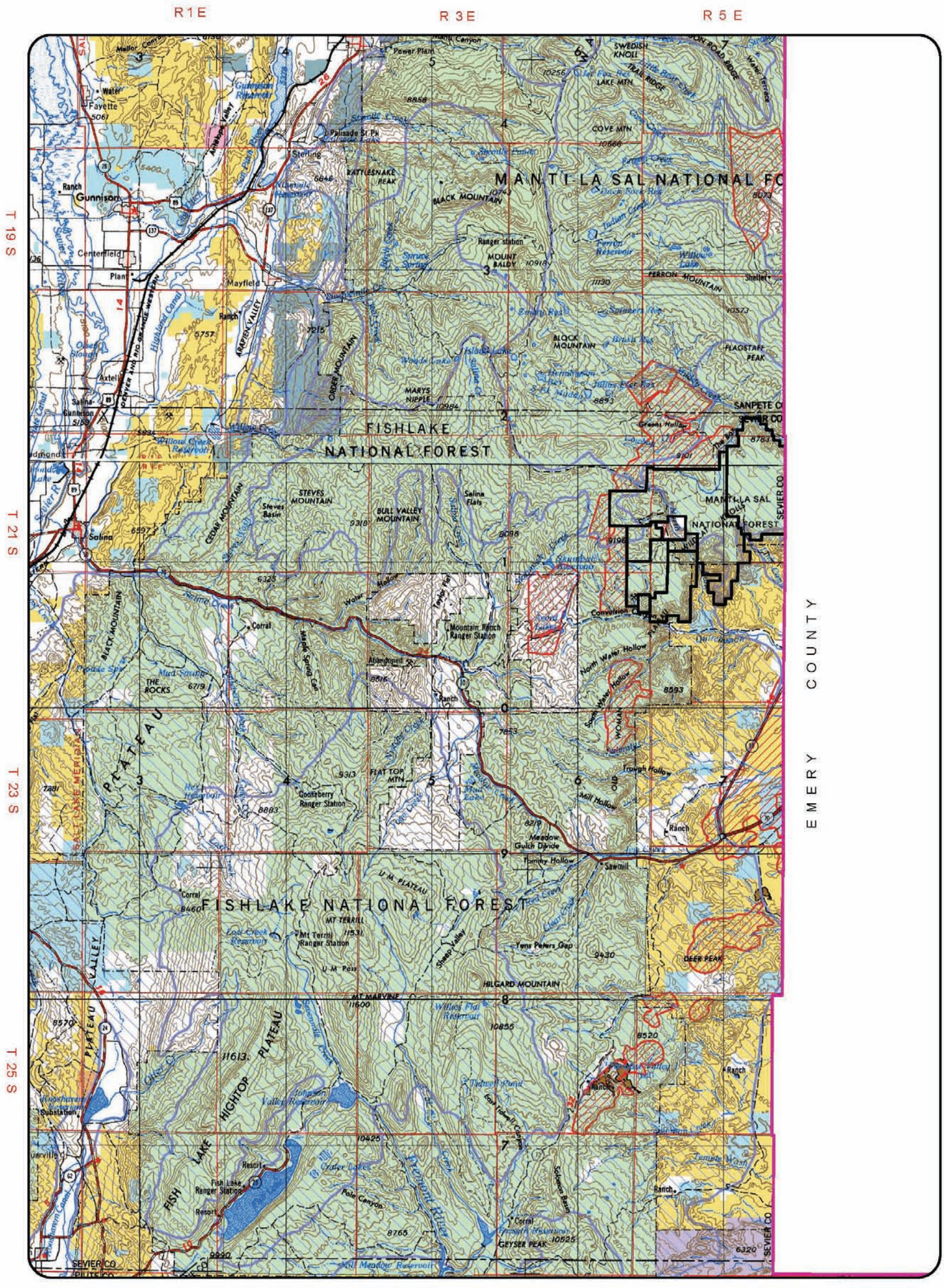

Coal Unsuitability Report - Emery and Wasatch Plateau Coal Fields
Map 6 - Crucial Elk Habitat (Criterion 15)

Underground Mineable Coal
Surface Mineable Coal
Federal Coal Leases
Crucial Elk Habitat

BLM
Forest Service
State
National Park
Private

Bureau of Land Management
Richfield Field Office
August 3, 2004

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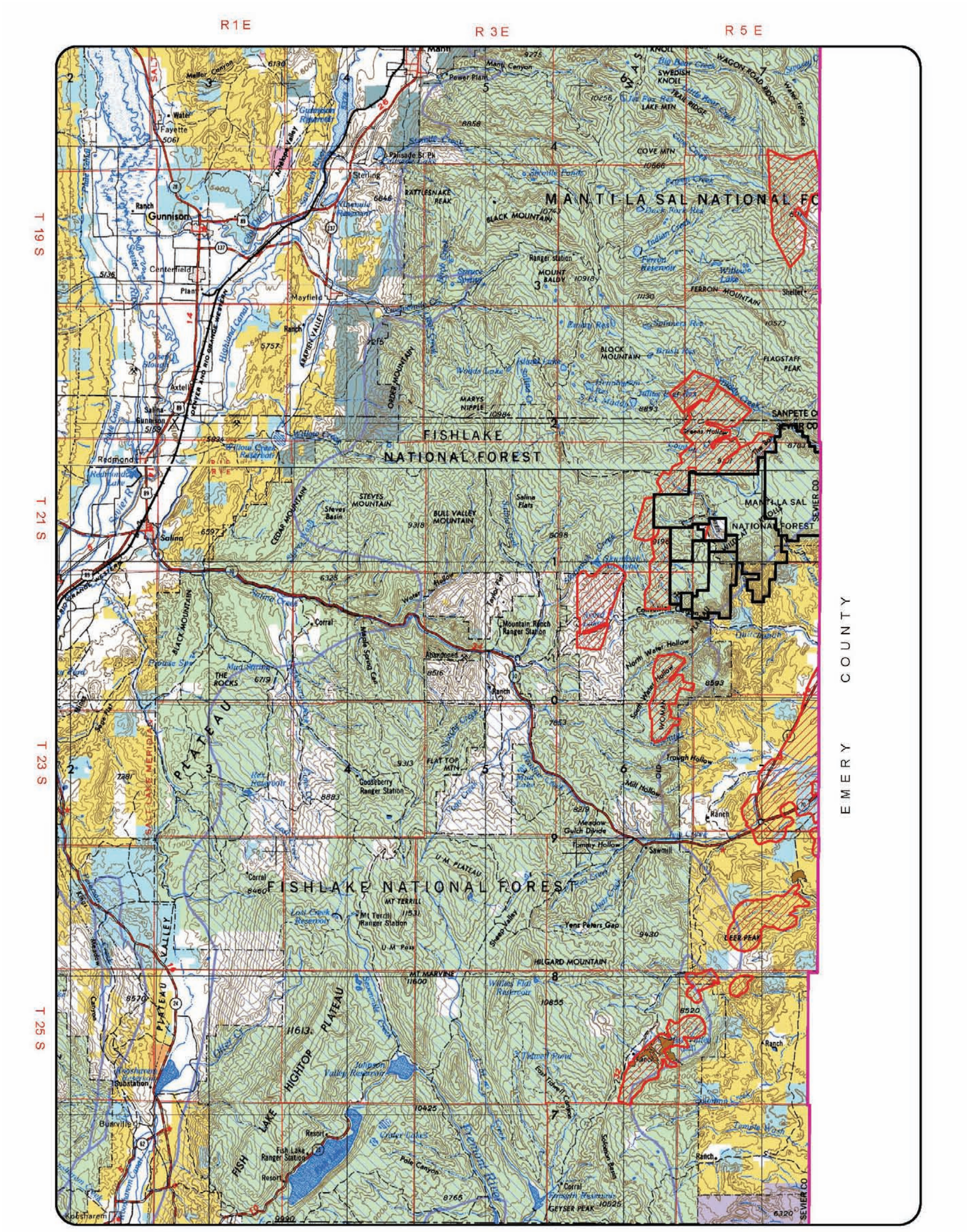
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FISHLAKE NATIONAL FOREST
MANTI-LA SAL NATIONAL FOREST
Gunnison
Centerfield
Mayfield
Axtell
Salina
Redmond
Sterling
Fayette
Manti
Ranger station
Corral
Sawmill
Ranch
Substation
Resort
Fish Lake Ranger Station
Mountain Ranch Ranger Station
Gooseberry Ranger Station
Mt Terrill Ranger Station
Cooper Hollow
Trough Hollow
Mill Hollow
Meadow Gulch Divide
Tommy Hollow
Yens Peters Gap
Johnson Valley Reservoir
Lost Creek Reservoir
Willis Flat Reservoir
Twelve Mile Flat
Fish Lake
Pleasant Valley
Sevenmile Creek
Fremont River
Salina Creek
Mud Spring
Mud Spring Creek
Pole Canyon
Solomon Basin
Tumpie Wash
Johnna Creek
Indian Creek
Ferron Reservoir
Willow Lake
Duck Fork Res
Brush Res
Spillmans Res
Woods Lake
Island Lake
Twin Lakes
Cedar Creek
Big Bear Creek
Little Bear Creek
Trail Ridge
Wagon Road Ridge
Warm Terrace
Lake Mtn
Cove Mtn
Swedish Knoll
Rattlesnake Peak
Black Mountain
Ferron Mountain
Block Mountain
Flagstaff Peak
Marys Nipple
Bull Valley Mountain
Steves Mountain
Steves Basin
Salina Flats
Cedar Mountain
Black Mountain
The Rocks
Flat Top Mtn
Mt Terrill
Hilgard Mountain
Mt Marvine
Deer Peak
Geyser Peak
Highway 89
Highway 28
Highway 24
Highway 62
Sevier River
Salina Creek
Manti Canyon
Meiler Canyon
Water Canyon
Arapien Valley
Axtell Valley
Plateau Valley
Fish Lake Plateau
Highland Canal
Denver and Rio Grande Western
Salt Lake Meridian
Power Plant
Palisade St Pk
Redmond Lake
Fayette 5061
Centerfield 5136
Gunnison 5153
Salina 6597
Mayfield 5757
Axtell 5926
Corral 8460
Corral 8516
Corral 8765
Ranch 7853
Ranch 8219
Ranch 6320
Ranch 8593
Ranch 8520
Ranch 7252
Ranch 8883
Ranch 7281
Ranch 6719
Ranch 6328
Ranch 9313
Ranch 9318
Ranch 8098
Ranch 9196
Ranch 8893
Ranch 9430
Ranch 11530
Ranch 10573
Ranch 10984
Ranch 10666
Ranch 10256
Ranch 8858
Ranch 9275
Ranch 6130
Ranch 6846
Ranch 10749
Ranch 10918
Ranch 9215
Ranch 11530
Ranch 11531
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Ranch 10525
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Ranch 8219
Ranch 8593
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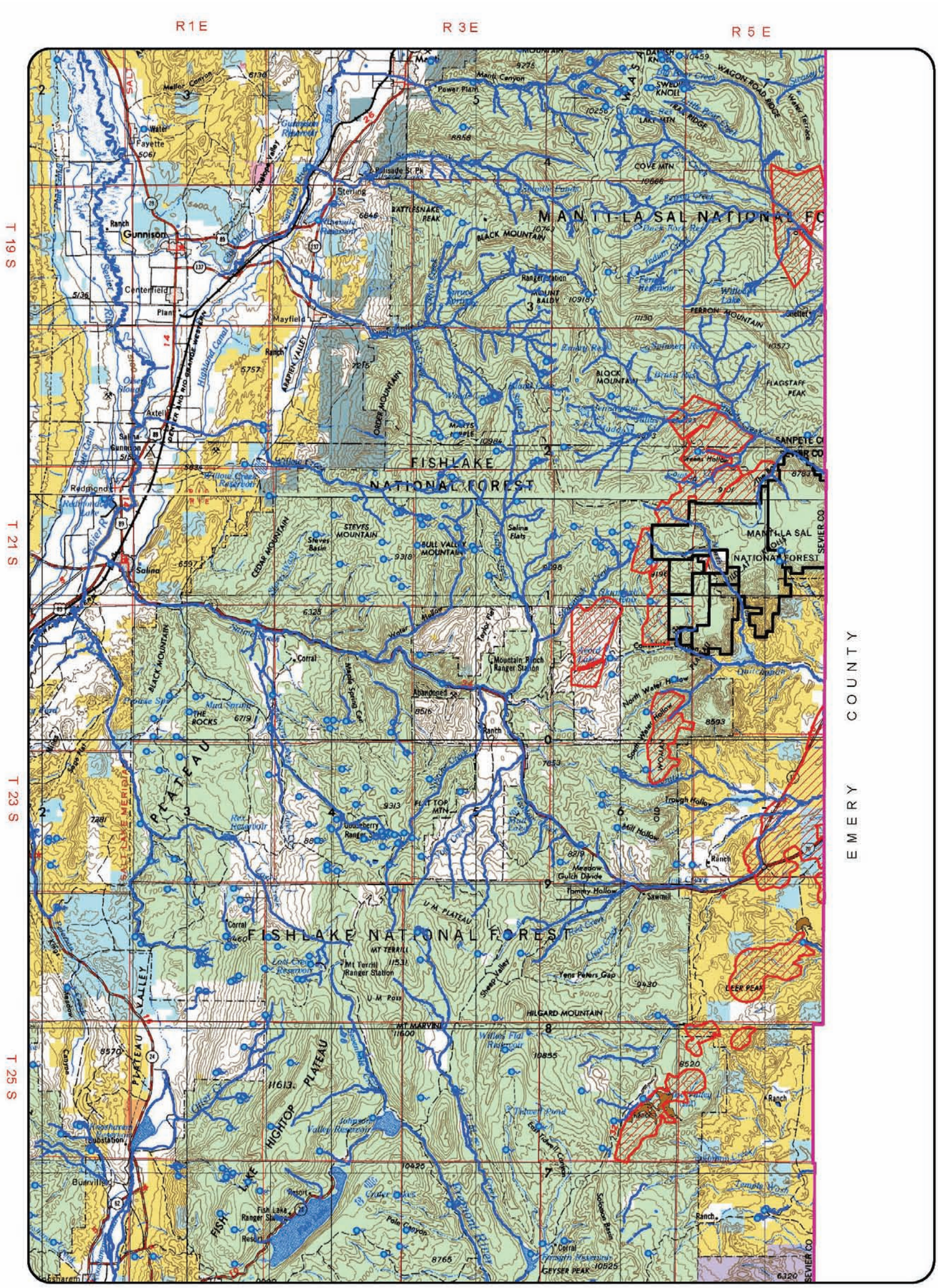
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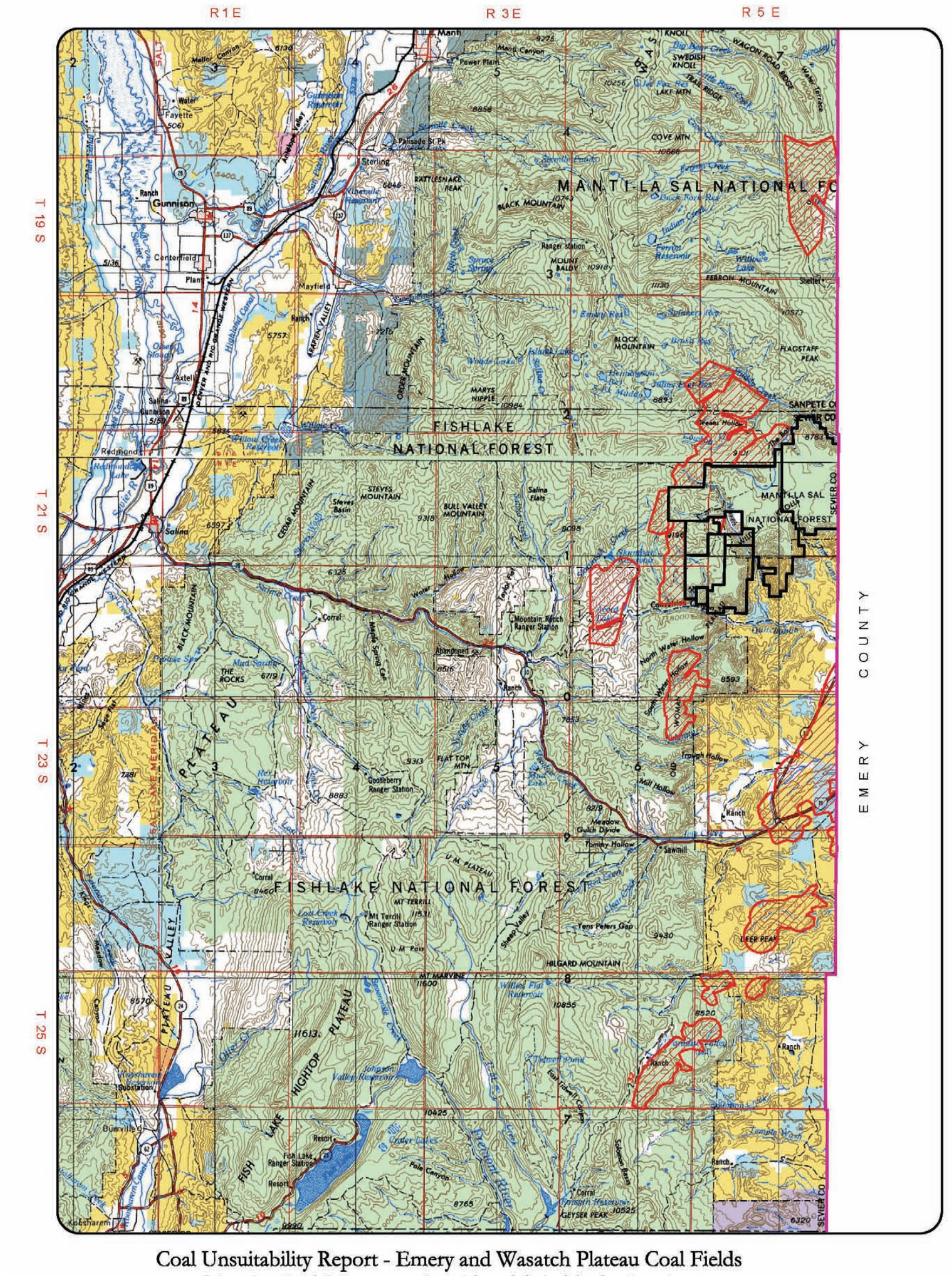
Ephraim
Fairview
Moroni
Sanpete Co
Sevier Co
Manti Canyon
Power Plant
Muller Canyon
Water
Ranch
Plant
Gunnison Reservoir
Sterling Reservoir
Manti Reservoir
Ephraim Reservoir
Fayette Reservoir
Centerfield Reservoir
Mayfield Reservoir
Redmond Lake
Salina Creek Reservoir
Willow Creek Reservoir
Lost Creek Reservoir
Johnson Valley Reservoir
Fish Lake Reservoir
Fish Lake Ranger Station
Mountain Ranch Ranger Station
Mt Terrill Ranger Station
Gooseberry Ranger Station
Ranger Station
Abandoned
Corral
Resort
Substation
Burrville
Sanpete Substation
Pleasant Valley Substation
Sevier River
Sanpete Canal
Highland Canal
Gunnison Valley Canal
Arapien Valley Canal
Pleasant Creek
San Pitch River
Manti Creek
Ephraim Creek
Fairview Canyon
Muller Canyon
Water Canyon
Meadow Creek
Mud Spring Canyon
Maple Spring Canyon
Trail Canyon
Pleasant Valley
Arapien Valley
Salina Canyon
Gooseberry Creek
Fremont River
Pole Canyon
Solomon Basin
Temple Wash
Trough Hollow
Mill Hollow
Meadow Gulch Divide
Tommy Hollow
Sawmill
Wagon Road Ridge
Little Pasture Creek
Indian Creek
Ferron Creek
Spring Creek
Bruin Point
Flagstaff Peak
Ferron Mountain
Willow Lake
Duck Fork Reservoir
Cove Mtn
Lake Mtn
Swede Knoll
Rattlesnake Peak
Black Mountain
Order Mountain
Cedar Mountain
Steves Mountain
Steves Basin
Bull Valley Mountain
Salina Flats
Hilgard Mountain
Mt Terrill
Mt Marvine
Flat Top Mtn
Geyser Peak
Leer Peak
Sawmill Canyon
Willes Flat Reservoir
Johnson Valley Reservoir
Fish Lake
Fish Lake Resort
Fremont River
Pleasant Valley



Coal Unsuitability Report - Emery and Wasatch Plateau Coal Fields
Map 9 - Coal Resources Considered Suitable for Leasing

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Richfield Field Office
August 3, 2004

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APPENDIX 9—TRAVEL MANAGEMENT/ROUTE DESIGNATION PROCESS

The Richfield Field Office (RFO) used the following process for route designation alternatives during the development of the Richfield Resource Management Plan (RMP) and Environmental Impact Statement (EIS). This process included route inventory, interdisciplinary team assessment, and cooperating agency coordination.

ROUTE INVENTORY

The RFO conducted a route inventory beginning in 2002, to develop a route baseline for use in the planning process. The Bureau of Land Management (BLM) used a variety of methods to inventory existing routes/ways within the RFO for consideration in the planning process, including Global Positioning System (GPS) (when available), data provided by the counties, map and orthophoto data, and staff/cooperator knowledge. BLM employees with GPS equipment digitized the routes while traveling on off-highway vehicles (OHV) and by foot. While inventorying the routes, staff collected surface type and primary and secondary usage associated with each route. The digitized route data was verified and prepared for interdisciplinary review. The counties provided route data in a Geographic Information System (GIS) data layer. Data from the BLM inventory was overlaid with the county route data, and discrepancies were identified, reviewed, and resolved through interdisciplinary team review. In the more remote areas of the RFO for which GPS/GIS data was not available, map and orthophoto data was used.

INTERDISCIPLINARY TEAM ASSESSMENT

Team members, who included BLM staff specialists and county cooperators, reviewed the route inventory during a series of interdisciplinary team meetings. These meetings were held in each county to address the specific routes within that county. The following assumptions were applied:

- Prohibit motorized vehicle cross-country travel, except in designated open areas
- Designate existing routes for motorized use unless closed or restricted (permanently, seasonally, or by size) as appropriate to address specific resource concerns
- Evaluate parallel, duplicative, or redundant routes for potential closure
- Allow closed or non-designated routes to rehabilitate naturally unless a specific resource impact is occurring that warrants expedited rehabilitation of the route (e.g., soil erosion, water quality concerns, and/or continued illegal use)
- Prohibit motorized use of designated closed routes, except for BLM administrative and emergency use
- Sign and map designated routes as motorized or nonmotorized; travel maps should be user friendly and easily accessible
- May be changes in existing route designations pursuant to land management objectives.

The interdisciplinary team applied the following factors to the route inventory and used other BLM inventories and natural and cultural resource information to identify routes for designation. The team considered the following:

- Environmental sensitivity of the areas surrounding the route, including soil type/condition, riparian areas and their condition, wilderness study areas (WSA), and sensitive plant species

- Wildlife habitat sensitivity of the areas surrounding the route, including designated critical habitat, sensitive status species habitat, crucial habitat, and sensitive season
- Current and anticipated use levels, as well as travel and transportation needs and desires
- Management objectives for the area, as well as the potential for user and resource conflicts
- Access needs for BLM-permitted or -authorized activities (e.g., range permittees, recreation permittees, mineral developments)
- Access needs for non-BLM administered lands
- Cultural resources and specific sites that require protection.

PLAN MAINTENANCE AND CHANGES TO ROUTE DESIGNATIONS

The Proposed RMP includes criteria to be considered when conducting plan maintenance, amendments, or revisions related to OHV area designations or the approved road and trail system within "Limited" areas. Future conditions may require the designation or construction of new routes or closure of existing routes to better address resources and resource use conflicts. Actual route designations within the Limited category can be modified without completing a plan amendment, although compliance with the National Environmental Policy Act (of 1969) (NEPA) is still required.

The RFO is aware that the current inventory of roads and trails being used for the route designation process is not 100 percent correct or complete. The RFO anticipates that in spite of intensive quality control and review, there will be errors. Some undesirable unintended consequences may result from the final configuration of the Travel Route Designations. Adjustments may be needed to make the travel designation compatible with adjacent landowners. For example, edge matching has occurred with adjacent BLM and United States Forest Service (USFS) jurisdictions, but continued review and coordination will be required as changes resulting from continued motorized travel planning occur in the future. Routes currently not in the inventory may need to be added and designated as part of the implementation process. An adaptive management process that will allow adjustments to the final decision and will maintain the validity and integrity of the analyses and public disclosure presented in the Final EIS is outlined below. This process includes pre-defining actions for the disposition of routes discovered after the decision date, adding new routes, correcting errors, and adjusting the route designations that lead to undesirable, unintended consequences.

As IM 2004-061 notes, plan maintenance can be accomplished through additional analysis and land use planning (e.g., activity-level planning). BLM will collaborate with affected and interested parties in evaluating the designated route network for suitability for active OHV management and envisioning potential changes in the existing system or adding new trails that would help meet current and future demands. In conducting such evaluations, the following factors would be considered:

- The travel management plan should be flexible to allow designating existing routes that were not identified in the baseline data.
- The travel management plan should be flexible about the location of new routes needed to provide access for new activities, to new areas, or to reduce resource and/or user conflicts.
- Route designations would be coordinated and made consistent with criteria and resource decisions identified in the Proposed RMP.
- Measures needed to meet the objectives stated in the Proposed RMP (e.g., cultural resources, soil resources, special status species, and recreation).

- Where and when appropriate, plan, develop, and designate (in cooperation with user groups and cooperating agencies) new routes and trails that enhance and expand recreational opportunities and encourage responsible use.
- Routes suitable for various categories of OHVs (e.g., motorcycles, all-terrain vehicles [ATVs], dune buggies, and 4-wheel drive touring vehicles) and opportunities for joint trail use.
- Needs for parking, trailheads, informational and directional signs, mapping and profiling, and development of brochures or other materials for public dissemination.
- Opportunities to tie into existing or planned route networks.
- Public land roads or trails determined to cause considerable adverse effects or to constitute a nuisance or threat to public safety would be considered for relocation or closure and rehabilitation after appropriate coordination with applicable agencies and partners.
- Those areas managed as closed will not be available for new motorized designation.

Regulations at 43 *Code of Federal Regulations* (CFR) 8342.2 require BLM to monitor the effects of OHV use. Changes should be made to the Travel Plan based on the information obtained through monitoring. Site-specific NEPA documentation is required for changing the route designations in this Travel Plan.

COOPERATING AGENCY COORDINATION

Interdisciplinary route assessment meetings were held by county, with county representatives in attendance. BLM managers and planners also met with cooperating agency representatives to review the proposed RMP and discuss concerns. Specifically, Garfield County representatives raised concerns regarding routes they claimed under Revised Statute 2477 (R.S. 2477). In addition, concerns were raised regarding routes not included in the baseline data, and access to the counties' resources and state lands.

IMPLEMENTATION PROCESS

Implementation decisions are actions that BLM takes to implement land use plans and generally constitute BLM's final approval for allowing on-the-ground actions to proceed. These types of decisions, which are based on site-specific planning and NEPA analyses, are subject to the administrative remedies set forth in the regulations that apply to each BLM resource management program. Implementation decisions are not subject to protest under the planning regulations; rather, they are subject to various administrative remedies. Where implementation decisions are made as part of the land use planning process, they are still subject to the appeals process or other administrative review as prescribed by specific resource program regulations after BLM resolves the protests to land use plan decisions and makes a decision to adopt or amend the Proposed RMP.

Travel planning and the implementation process include the following:

- The monitoring of the transportation system and modifying as appropriate
- A map of roads and trails for all travel modes
- Notations of any limitation for specific roads and trails
- Criteria to select or reject roads and trails in the final travel management network, add new roads or trails, and specify limitations
- Guidelines for management, monitoring, and maintenance of the transportation system
- Needed easements and rights-of-ways (to be issued to BLM or others) to maintain the existing road and trail network providing public land access.

The Proposed RMP completes the initial route designation component of the Travel Management Plan and implementation process. These routes would be the initial basis for signing and enforcement. The RFO will prioritize additional implementation actions, resources, and geographic areas based on RMP goals and objectives and the guidelines noted above.

APPENDIX 10—RAPTOR BEST MANAGEMENT PRACTICES

INTRODUCTION

Raptors, or *Birds of Prey*, are found on public lands throughout Utah. Approximately 31 species of raptors use public lands for at least a portion of their life cycle. These species include 20 diurnal raptors, including the eagles, hawks, falcons, osprey, turkey vulture, and California condor in addition to 11 mostly nocturnal owl species. At least 16 of the diurnal raptors are known to nest, roost, and forage on public lands, while two others are probable nesters within the southern part of the state. The California condor is known to use public lands for roosting and foraging but is not currently known to nest within the state. The rough-legged hawk is a winter resident that uses public lands for foraging. All of the owl species nest, roost, and forage on public lands in Utah.

The Bureau of Land Management (BLM) considers eight of Utah's raptors to be special status species. These raptors currently receive enhanced protection in addition to the regulatory authority the Migratory Bird Treaty Act (MBTA) provides in covering all raptor species. The Mexican spotted owl is listed as a federally threatened species and is afforded the protection, as well as the Section 7 consultation requirements, of the Endangered Species Act (ESA). The bald eagle has been delisted by the U.S. Fish and Wildlife Service (USFWS), but remains on the Sensitive Species list. Both the bald eagle and golden eagle are protected by the provisions of the Eagle Protection Act. The California condor is a federally endangered species; however, the birds found in southern Utah are part of an Experimental Non-essential Population reintroduced to northern Arizona under Section 10(j) of the ESA. BLM is required to treat the condor as a species proposed for listing for Section 7 purposes of the ESA. The northern goshawk is managed by a multi-agency Conservation Agreement. The ferruginous hawk, short-eared owl, and burrowing owl are listed as Wildlife Species of Concern by the Utah Division of Wildlife Resources (UDWR 2006), and are therefore recognized as BLM state-sensitive species under the Bureau's 6840 Manual. The BLM's 6840 Policy states that "*BLM shall…ensure that actions authorized, funded, or carried out…do not contribute to the need for the species to become listed.*"

Future raptor management on BLM lands in Utah will be guided by using Best Management Practices (BMPs), which are BLM-specific recommendations for implementing the USFWS Utah Field Office's, "*Guidelines for Raptor Protection From Human and Land Use Disturbances"* (*"Guidelines"*) (USFWS 1999). USFWS originally developed the "*Guidelines*" in 1999 and updated them in 2002 to reflect changes brought about by court and policy decisions and to incorporate Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds. The *"Guidelines"* were provided to BLM and other land-managing agencies in an attempt to provide raptor management consistency, while ensuring project compatibility with the biological requirements of raptors and encouraging an ecosystem approach to habitat management.

These BMPs, or specific elements of the BMPs that pertain to a proposal, should be attached as Conditions of Approval to all BLM use authorizations that have the potential to adversely affect nesting raptors, or would cause occupied nest sites to become unsuitable for nesting in subsequent years.

Raptor management is a dynamic and evolving science, and consequently, as the science evolves, these BMPs will undergo subsequent revision. As more information becomes available through implementation of these raptor BMPs, and as our knowledge of raptor life-cycle requirements increases, findings will be incorporated into future revisions of the BMP document. In addition, BLM and the Department of Energy

are initiating a 3-year Raptor Radii study, which will test traditional spatial and seasonal nest buffers during actual oil and gas development activities for a select suite of species. Study results would be incorporated into new BMP revisions as well.

To adequately manage raptors and their habitats and to reduce the likelihood of a raptor species being listed under the ESA, BLM-authorized or proposed management activities and/or land-disturbing actions would be subject to the criteria and processes specified within these BMPs. The implementation of raptor spatial and seasonal buffers under the BMPs would be consistent with Table 2 of the *"Guidelines,"* included here as Attachment 2. As specified in the *"Guidelines,"* modifications of spatial and seasonal buffers for BLM-authorized actions would be permitted if the protection of nesting raptors was ensured. State and/or federally listed, proposed, and candidate raptor species, as well as BLM state-sensitive raptor species, should be afforded the highest level of protection through this BMP process; however, all raptor species would continue to receive protection under the Migratory Bird Treaty Act. Modification of the buffers for threatened or endangered species would be considered, pending the results of Section 7 consultation with USFWS.

As stated in the *"Guidelines,"* spatial and seasonal buffers should be considered as the best available recommendations for protecting nesting raptors under a wide range of activities statewide. However, they are not necessarily site-specific to proposed projects. Land managers should evaluate the type and duration of the proposed activity, the position of topographic and vegetative features, the sensitivity of the affected species, the habituation of breeding pairs to existing activities in the proposed project area, and the local raptor nesting density when determining site-specific buffers. BLM would be encouraged to coordinate informally with UDWR and USFWS any time a site-specific analysis shows that an action may adversely affect nesting raptors. The coordination would determine whether the impact could be avoided or must be mitigated, and if so, to determine appropriate and effective mitigation strategies.

Potential modifications of the spatial and seasonal buffers identified in the *"Guidelines"* may provide a viable management option. Modifications would ensure that nest protection would occur, while allowing various management options that may deviate from the suggested buffers within the *"Guidelines."* These options, if adequately monitored, could provide valuable information for incorporation into future management actions.

Local raptor nesting authorities who know the raptor nesting chronologies within their local area should review the seasonal raptor buffers provided in Attachment 2. For those nesting raptors for which local nesting chronologies remain uncertain, the Attachment 2 seasonal buffers should serve as the default. However, for those raptor species whose known nesting chronologies differ from the seasonal buffers provided in Attachment 2, the local seasonal buffers may be used as a modification of the *"Guidelines."*

Criteria that would need to be met before implementing modifications to the spatial and seasonal buffers in the *"Guidelines"* would include the following:

1. A wildlife biologist or other qualified individual will complete a site-specific assessment. See example in Attachment 1.

2. The BLM Field Office Wildlife biologist will write documentation identifying the proposed modification and affirming that implementing the proposed modification(s) would not affect nest success or the suitability of the site for future nesting. Modification of the *"Guidelines"* would not be recommended if it is determined that adverse impacts to nesting raptors would occur or that the suitability of the site for future nesting would be compromised.

3. A BLM biologist or other raptor biologist will develop a monitoring and mitigation strategy. Impacts of authorized activities would be documented to determine whether the modifications were implemented as described in the environmental documentation or Conditions of Approval and were adequate to protect the nest site. If adverse impacts are identified during monitoring of an activity, BLM would follow an appropriate course of action, which may include cessation or modification of activities that would avoid, minimize, or mitigate the impact. Or, with the approval of UDWR and USFWS, BLM could allow the activity to continue while requiring monitoring to determine the full impact of the activity on the affected raptor nest. A monitoring report would be completed and forwarded to UDWR for incorporation into the Natural Heritage Program (NHP) raptor database.

In a further effort to provide additional support and expertise to local BLM field biologists, a network of biologists from various agencies with specific expertise in raptor management has been identified and included as Attachment 3. The personnel identified have extensive backgrounds in raptor management issues and are available, upon request, to assist BLM field biologists on a case-by-case basis. Field biologists are encouraged to use this network, via informal conference, with one or more of the individuals identified. This coordination should be clearly distinguished from the consultation process required under Section 7 of the ESA. Individuals on the expert panel should not be expected to provide formal advice, but should serve as a sounding board for discussing potential affects of a proposal as well as potential mitigation measures on specific projects which may be useful to BLM biologists.

HABITAT ENHANCEMENT

As recommended in the *"Guidelines,"* raptor habitat management and enhancement, both within and outside of buffers, would be an integral part of these BMPs, with the understanding that for raptors to maintain high densities and maximum diversity, it is necessary that the habitat upon which they and their prey species depend be managed to promote healthy and productive ecosystems. Habitat loss or fragmentation would be minimized and/or mitigated to the extent practical, and may include such measures as drilling multiple wellheads per pad, limiting access roads and avoiding loop roads to well pads, effectively rehabilitating or restoring plugged and abandoned well locations and access roads that are no longer required, and rehabilitating or restoring wildland fires to prevent domination by nonnative invasive annual species, vegetation treatments, and riparian restoration projects to achieve Rangeland Health Standards.

In some cases, artificial nesting structures, located in areas where preferred nesting substrates are limited but where prey base populations are adequate and human disturbances are limited, may enhance some raptor populations, or may serve as mitigation for impacts occurring in other areas.

PROTECTION OF NEST SITES AND BUFFER ZONES

As stated in the *"Guidelines,"* protecting both occupied and unoccupied nests is important because not all raptor pairs breed every year, nor do they always use the same nest within a nesting territory. Individual raptor nests left unused for a number of years are frequently reoccupied, if all of the nesting attributes which originally attracted a nesting pair to a location are still present. Nest sites are selected by breeding pairs for the preferred habitat attributes provided by that location.

Raptor nest buffer zones are established for planning purposes because the nest serves as the focal point for a nesting pair of raptors. The buffer should serve as a threshold of potential adverse affect to nest

initiation and productivity. Actions proposed within these buffer zones are considered potentially impacting and, therefore, trigger the need for consideration of site-specific recommendations.

Seasonal (temporal) buffer zones are conservation measures intended to schedule potentially impacting activities to periods outside of the nesting season for a particular raptor species. These seasonal limitations are particularly applicable to actions proposed within the spatial buffer zone of a nest for short duration activities. These activities include pipeline or power line construction, seismic exploration activity, vegetative treatments, fence or reservoir construction, permitted recreational events, where subsequent human activity would not be expected to occur.

Spatial buffer zones are those physical areas around raptor nest sites where seasonal conservation measures or surface occupancy restrictions may be applied, depending on the type and duration of activity, distance and visibility of the activity from the nest site, adaptability of the raptor species to disturbance, etc. Surface occupancy restrictions should be used for actions that would involve human activities within the buffer zone for a long duration (more than one nesting season) and that would cause an occupied nest site to become unsuitable for nesting in subsequent years.

Unoccupied Nests

All Activities, Including All Mineral Leases

Surface disturbing activities occurring outside the breeding season (seasonal buffer), but within the spatial buffer, would be allowed during a minimum 3-year nest monitoring period if a wildlife biologists determines that the activity would not cause the nest site to become unsuitable for future nesting. Facilities and other permanent structures would be allowed if they meet the above criteria.

Some examples of typical surface disturbing actions occurring outside of the seasonal buffer which may not be expected to affect nest production or future nesting suitability would include pipelines, power lines, seismographic exploration, communication sites, an oil or gas well with offsite facilities which does not require routine visitation, recreation events, fence or reservoir construction, vegetative treatments, and other actions with discreet starting and ending times, and for which subsequent human activity or heavy equipment operation within the spatial buffer would not be expected to occur, or could be scheduled outside of the seasonal buffer in subsequent years.

Surface-disturbing activities that would be expected to potentially affect nest production or nest site suitability include oil and gas facilities requiring regular maintenance, sand and gravel operations, road systems, wind energy projects, mining operations, and other actions requiring continual, random human activity or heavy equipment operation during subsequent nesting seasons.

A nest site that does not exhibit evidence of use—such as greenery in the nest, fresh whitewash, obvious nest maintenance or the observed presence of adults or young at the nest—for three consecutive years (verified through monitoring)would be deemed abandoned, and all seasonal and spatial restrictions would cease to apply to that nest. All subsequent authorizations for permanent activities within the spatial buffer of the nest could be permitted. If the nest becomes reoccupied after authorized activities are completed, conservation measures would be considered to reduce potential adverse effects and to comply with the Migratory Bird Treaty Act and the Eagle Protection Act.

The 3-year non-use standard varies from the *"Guidelines"* suggested 7-year non-use standard before declaring nest abandonment. This variation is based on a similar standard that has been applied for more than 20 years in two administrative areas within Utah. Empirical evidence would suggest the 3-year non-use standard has been effective in conserving raptor species. The 3-year standard has been applied

without legal challenge or violation of "Take" under the Migratory Bird Treaty Act or the Eagle Protection Act.

Because prey base populations are known to be cyclic and because raptor nest initiation or nesting success can be affected by drought and other random natural events, care should be taken when applying the 3-year non-activity standard. The 3-year nest occupancy monitoring requirement should be viewed as a minimum time period during those years of optimal raptor nesting conditions. During suboptimal raptor nesting years, when nesting habitat may be affected by drought, low prey base populations, fire, or other events, the monitoring standard should be increased to allow raptors the opportunity to reoccupy nesting sites when nesting conditions become more favorable.

Occupied Nests

All Activities

Land use activities that would adversely affect an occupied raptor nest would not be allowed within the spatial or seasonal buffer.

CONSIDERATION OF ALTERNATIVES AND MITIGATION MEASURES

Alternatives, including denial of the proposal, should be identified, considered, and analyzed in a National Environmental Policy Act (NEPA) document any time an action is proposed within the spatial buffer zone of a raptor nest. Selecting a viable alternative that avoids an impact to nesting raptors should be chosen over attempting to mitigate those impacts. If unavoidable impacts are identified, mitigation measures should be applied as necessary to lessen adverse impacts of resource uses and development on nesting raptors. Monitoring the effectiveness of the mitigation measures should be mandatory and should be included as a Condition of Approval.

SPECIFIC STRATEGIES TO BE IMPLEMENTED REGARDING OTHER RESOURCE USES

The following management strategies are designed to reduce or eliminate potential conflicts between raptors and other resource uses. This list of examples is not intended to be all-inclusive. In all cases, when an activity on BLM lands is proposed and a NEPA document is developed, the site-specific analysis process identified in Attachment 1 may be implemented to identify and either avoid or mitigate impacts to raptors from the proposal. These strategies apply to both BLM and applicant-generated proposals. The strategies are as follows.

Cultural Resources

Excavation and studies of cultural resources in caves and around cliff areas should be delayed until a qualified biologist surveys the area to be disturbed or impacted by the activity for the presence of raptors or nest sites. If nesting raptors are present, the project should be rescheduled to occur outside of the seasonal buffer recommended by the "*Guidelines.*"

Forestry and Harvest of Woodland Products

Timber harvest would be subject to NEPA analysis and would be conducted in a manner that would avoid impacts to raptor nests. This could also apply to areas identified for wood gathering and firewood sales.

Hazardous Fuel Reduction/Habitat Restoration Projects

Hazardous fuels reduction projects and shrub-steppe restoration projects should be reviewed for possible impacts to nesting raptors. Removal of trees containing either stick nests or nesting cavities, through prescribed fire or mechanical or manual treatments, should be avoided.

It is important to note that certain raptor species are tied to specific habitat types, and that consideration must be made on a site-specific basis when vegetation manipulation projects are proposed to determine which raptor species may benefit and which may be adversely affected by the vegetation composition post-treatment.

Livestock Grazing

Manage rangelands and riparian areas in a manner that promotes healthy, productive rangelands and functional riparian systems. Rangeland Health Assessments should be conducted on each grazing allotment, and rangeland guidelines should be implemented where Rangeland Health Standards are not being met to promote healthy rangelands.

Locations of sheep camps and other temporary intrusions would be located in areas away from raptor nest sites during the nesting season. Placement of salt and mineral blocks would also be located away from nesting areas.

Season of use, kind of livestock, and target utilization levels of key species affect vegetative community attributes (percent cover, composition, etc.) and influence small mammal and avian species diversity and density. While not all raptor species would be affected in the same way, livestock management practices that maintain or enhance vegetative attributes will preserve prey species density and diversity, which will benefit the raptor resource.

Off-Highway Vehicle Use

Special Recreation Management Areas (SRMAs) that are developed for off-highway vehicle (OHV) use would not be located in areas that have important nesting, roosting, or foraging habitat for raptors.

OHVs use would be limited to designated roads, trails, and managed open areas. Lands categorized as “open” for OHV use should not be in areas important to raptors for nesting, roosting, and foraging.

When proposals for OHV events are received, a qualified wildlife biologist would survey the area to be impacted to determine if the area is used by raptors. Potential conflicts would be identified and either avoided or mitigated prior to the issuance of any permit.

Oil and Gas Development

The Code of Federal Regulations (CFR), 43 CFR 3101.1-2, allows for well site location and timing to be modified from that requested by the lessee to mitigate conflicts at the proposed site, and states that the location can be moved up to 200 meters, and the timing of the actual drilling can be delayed for up to 60

days to mitigate environmental concerns. The regulation also allows BLM to move a location more than 200 meters, or delay operations more than 60 days to protect sensitive resources, with supporting rationale and where lesser restrictions are ineffective. The Site-Specific Analysis (Attachment 1) would provide the supporting rationale. Provisions are also present within Sections 3 and 6 of the Standard Lease Form that require compliance with existing laws and would allow BLM to impose additional restrictions at the permitting phase if the restrictions will prevent violation of law, policy, or regulation, or if they avoid undue and unnecessary degradation of lands or resources.

Realty

Lands proposed for disposal, which include raptor nesting, roosting, or important foraging areas, would be analyzed and evaluated for the relative significance of these resources before a decision is made for disposal or retention.

A priority list of important raptor habitat areas, especially for federally listed or state-sensitive raptor species, on state and private lands should be developed and used as lands to be acquired by BLM when opportunities arise to exchange or otherwise acquire lands.

Lands and realty authorizations would include appropriate conservation measures to avoid and/or mitigate impacts to raptors.

Recreation

Development of biking trails near raptor nesting areas would be avoided.

Rock climbing activities would be authorized only in areas where there are no conflicts with cliff-nesting raptors.

In high recreation use areas where raptor nest sites have been made unsuitable by existing disturbance or habitat alteration, mitigation should be considered to replace nest sites with artificial nest structures in nearby suitable habitat, if it exists, and consider seasonal protection of nest sites through fencing or other restrictions.

Dispersed recreation would be monitored to identify where this use may be affecting nesting success of raptors.

Wild Horse Program

In areas where wild horse numbers are determined to be in excess of the carrying capacity of the range, removal of horses, as described in the various herd management area plans, would continue to prevent further damage to rangelands.

INVENTORY AND MONITORING

a) Each Field Office should cooperatively manage a raptor database, with UDWR and USFWS, as part of the BLM Corporate database. Raptor data should be collected and compiled using the Utah Raptor Data Collection Standards developed by the Utah State Office so that personnel from other agencies can access the data. Appropriate survey and monitoring protocols should be followed, when available. This database should be updated as new inventory and monitoring data

becomes available. The data should also be forwarded to UDWR and the NHP, which has been identified as the central repository for raptor data storage for the State of Utah.

b) Use of seasonal employees and volunteers, as well as "Challenge Cost Share" projects, should be used to augment the inventory and monitoring of raptor nests within a planning area, with the data entered into the above-mentioned databases at the close of each nesting season. Project proponents, such as energy development interests, would be encouraged to participate and help support an annual raptor nest monitoring effort within their areas of interest.

c) Active nest sites should be monitored during all authorized activities that may have an impact on the behavior or survival of the raptors at the nest site. A qualified biologist would conduct the monitoring and document the impacts of the activity on the species and to determine if adjustments to a site-specific project may be necessary. A final report of the impacts of the project should be placed in the environmental assessment (EA) file, with a copy submitted to the NHP. The report would be made available for review and should identify what activities may affect raptor nesting success, and should be used to recommend appropriate buffer zones for various raptor species.

d) As data are gathered, and impact analyses are more accurately documented, "adaptive management" principles should be implemented. Authorization of future activities should take new information into account, better protecting raptors while potentially allowing more development and fewer restrictions, if data indicates that current restrictions are beyond those necessary to protect nesting raptors, or conversely indicates that current guidance is inadequate for protection of nesting raptors.

ATTACHMENT 1 – SITE-SPECIFIC ANALYSIS DATA SHEET

Observer(s)_____ **Date**_____

1. **Conduct a site visit to the area of the proposed action and complete the raptor nest site data sheet according to BLM data standards**.

2. Area of Interest Documentation (**Bold** items require completion, other information is optional)

State_____ **Office**_____ **Management Unit** _____

Project ID#

Location (Description)

Legal T____ , R ____ , Sec. _____ , 1/4, _____ 1/4, _____

or UTM Coordinates Latitude_____ Longitude_____

Photos Taken Y( ) N( )

Description of photos:

_____
_____
_____
_____
_____
_____
_____

Raptor Species_____ Confirmed_____ Unconfirmed_____

Distance From Proposed Disturbance to: **Nest** _____
Perch_____
Roost_____

Line of Site Evaluation From: **Nest** _____
Perch_____
Roost_____

Extent of Disturbance: Permanent_____ Temporary____

Distance from Nest/Roost _____ Acreage_____

Length of Time_____ Timing Variations_____ Disturbance Frequency_____

Other Disturbance Factors: Yes (If yes, explain what and include distances from nest to disturbances) No

Approximate Age of Nest: New_____ **Historical**: (Number of Years)_____

Evidence of Use (Describe):

Habitat Values Impacted:

Proportion of Habitat Impacted (Relate in terms of habitat available):

Estimated Noise Levels of Project (db): _____

Available Alternative(s) (e.g., location, season, technology):

Associated Activities:_____

Cumulative Effects of Proposal and Other Actions in Habitat Not Associated With the Proposal:

Potential for Site Rehabilitation: High_____ Low_____

Notes/Comments:

Summary of Proposed Modifications:

Possible modifications to the spatial and seasonal buffers within the USFWS *"Guidelines"* include the following:

Rationale:

Summary of Proposed Mitigation Measures:

Possible mitigation measures related to the proposal include the following:

Rationale:

Summary of Alternatives Considered:

Possible alternatives to the proposal include the following:

Rationale:

Recommendation to FO Manager Based on Above Findings:

Field Office Wildlife Biologist Date

ATTACHMENT 2 – NESTING PERIODS AND RECOMMENDED BUFFERS FOR RAPTORS IN UTAH

Species	Spatial Buffer (miles)	Seasonal Buffer	Incubation, # Days	Brooding, # Days Post-Hatch	Fledging, # Days Post-Hatch	Post-fledge Dependency to Nest, # Days[1]
Bald eagle	1.0	1/1-8/31	34-36	21-28	70-80	14-20
Golden eagle	0.5	1/1-8/31	43-45	30-40	66-75	14-20
N. Goshawk	0.5	3/1-8/15	36-38	20-22	34-41	20-22
N. Harrier	0.5	4/1-8/15	32-38	21-28	42	7
Cooper's hawk	0.5	3/15-8/31	32-36	14	27-34	10
Ferruginous hawk	0.5	3/1-8/1	32-33	21	38-48	7-10
Red-tailed hawk	0.5	3/15-8/15	30-35	35	45-46	14-18
Sharp-shinned hawk	0.5	3/15-8/31	32-35	15	24-27	12-16
Swainson's hawk	0.5	3/1-8/31	33-36	20	36-40	14
Turkey vulture	0.5	5/1-8/15	38-41	14	63-88	10-12
California condor	1.0	NN yet	56-58	5-8 weeks	5-6 months	2 months
Peregrine falcon	1.0	2/1-8/31	33-35	14-21	35-49	21
Prairie falcon	0.25	4/1-8/31	29-33	28	35-42	7-14
Merlin	0.5	4/1-8/31	28-32	7	30-35	7-19
American kestrel	NN[2]	4/1-8/15	26-32	8-10	27-30	12
Osprey	0.5	4/1-8/31	37-38	30-35	48-59	45-50
Boreal owl	0.25	2/1-7/31	25-32	20-24	28-36	12-14
Burrowing owl	0.25	3/1-8/31	27-30	20-22	40-45	21-28
Flammulated owl	0.25	4/1-9/30	21-22	12	22-25	7-14
Great horned owl	0.25	12/1-9/31	30-35	21-28	40-50	7-14
Long-eared owl	0.25	2/1-8/15	26-28	20-26	30-40	7-14
N. saw-whet owl	0.25	3/1-8/31	26-28	20-22	27-34	7-14
Short-eared owl	0.25	3/1-8/1	24-29	12-18	24-27	7-14
Mex. Spotted owl	0.5	3/1-8/31	28-32	14-21	34-36	10-12
N. Pygmy owl	0.25	4/1-8/1	27-31	10-14	28-30	7-14
W. Screech owl	0.25	3/1-8/15	21-30	10-14	30-32	7-14
Common Barn-owl	NN[2]	2/1-9/15	30-34	20-22	56-62	7-14

1 Length of post-fledge dependency period to parents is longer than reported in this table. Reported dependency periods reflect the amount of time the young are still dependent on the nest site; e.g., they return to the nest for feeding.
2 Due to apparent high population densities and ability to adapt to human activity, a spatial buffer is not currently considered necessary for maintenance of American kestrel or Common barn-owl populations. Actions resulting in direct mortality of individual birds or take of known nest sites are unlawful.

ATTACHMENT 3 – UTAH RAPTOR MANAGEMENT EXPERTS FROM VARIOUS AGENCIES

The personnel listed are from various agencies in Utah who are recognized experts in the field of raptor ecology or who have extensive field experience in managing raptor resources with competing land uses. BLM field biologists and managers can use this network of specialized expertise to assist, as time permits, with specific raptor management issues. Individuals in this Utah raptor network also have well-established contacts with an informal extended network of highly qualified raptor ecologists outside the state (e.g., USGS, state wildlife agencies, universities) to provide an additional regional perspective.

This list is not intended to replace or interfere with established lines of communication but rather supplement these lines of communication.

Utah BLM	**David Mills**	**david_mills@blm.gov**	**435-896-1571**
Utah BLM	**Steve Madsen**	**steve_c_madsen@blm.gov**	**801-539-4058**
Utah DWR	**Dr. Jim Parrish**	**jimparrish@utah.gov**	**801-538-4788**
Utah DWR (NERO)	**Brian Maxfield**	**brianmaxfield@utah.gov**	**435-790-5355**
USFWS	**Laura Romin**	**laura_romin@usfws.gov**	**801-975-3330**
USFWS	**Diana Whittington**	**diana_whittington@usfws.gov**	**801-975-3330**
USFS	**Chris Colt**	**ccolt@fs.fed.us**	**801-896-1062**
HawkWatch Intl	**Jeff Smith**	**jsmith@hawkwatch.org**	**801-484-6808**

REFERENCES

Code of Federal Regulations; 43 CFR 3101.1-2, Leasing Regulations.

Endangered Species Act (ESA); 16 U.S.C. 1513-1543.

Migratory Bird Treaty Act (MBTA); 16 U.S.C. 703-712.

Romin, Laura A. and James A. Muck, 2002, "Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances." U.S. Department of Interior, U.S. Fish and Wildlife Service, Utah Field Office, Salt Lake City, Utah.

Standards for Rangeland Health and Guidelines for Grazing Management; 1997. U.S. Department of Interior, Bureau of Land Management.

U.S. Department of the Interior, Bureau of Land Management; 6840 Manual.

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APPENDIX 11—OIL AND GAS LEASING STIPULATIONS AND LEASE NOTICES

This appendix lists, by alternative, the stipulations on oil and gas leasing referenced in Chapter 2 of this Proposed Resource Management Plan/Final Environmental Impact Statement. Oil and gas lease notices regarding listed plant and animal species have also been included in this document. These notices will be made a part of any oil and gas leases issued by the Field Office. Applicable stipulations would be appended to permits and leases issued for oil and gas resources on the public lands.

DESCRIPTION OF SURFACE STIPULATIONS

Three types of surface stipulations can be applied to oil and gas leases: (1) no surface occupancy (NSO), (2) timing limitations (TL), and (3) controlled surface use (CSU).

- **No Surface Occupancy:** Areas closed to placement of surface facilities such as roads, oil and gas wells, and other facilities.
- **Timing Limitations:** Areas closed to construction and developmental activities during identified time frames. Timing limitation areas may be open to maintenance activities, including associated vehicle travel, during the closed period unless otherwise specified in the stipulation.
- **Controlled Surface Use:** Areas where surface uses are subject to specified controls or constraints to protect identified resource values.

Table A11-1 shows resources of concern, stipulations for addressing those concerns, and criteria for considering exceptions, modifications, and waivers.

Exceptions, Modifications, and Waivers

An operator submitting a plan of operations to the Bureau of Land Management (BLM) may request an exception, modification, or waiver of a stipulation included in a lease.

- **Exception:** A one-time exemption to a lease stipulation determined on a case-by-case basis.
- **Modification:** A change to the provisions of a lease stipulation, either temporarily or for the term of the lease.
- **Waiver:** A permanent exemption to a lease stipulation.

The resource management plan (RMP) serves as the vehicle for explaining to industry and the public the conditions under which waivers, exceptions, or modifications of lease stipulations may be granted. All circumstances for granting a waiver, exception, or modification must be documented in the RMP.

The person requesting the exception, modification, or waiver is encouraged to submit information that might assist the authorized official in making a decision. The authorized officer reviews information submitted in support of the request and other pertinent information. The authorized officer may modify, waive, or grant an exception to a stipulation if:

- The action is consistent with federal laws.
- The action is consistent with the RMP.
- The management objectives that led the BLM to require the lease stipulation can be met without restricting operations in the manner provided for by the stipulation given changes in the condition

of the surface resources involved, or given the nature, location, timing, or design of the proposed operations.

- The action is acceptable to the authorized officer based on a review of the environmental consequences.

Table A11-1 includes criteria for considering requests for exceptions, modifications or waivers. Where there are overlapping stipulations on the same land, the more stringent stipulation applies.

Table A11-1. Oil and Gas Lease Stipulations—Richfield Field Office

Resource of Concern	Applicable Area	Stipulation	Alternative					Stipulation Description
			N	A	Proposed RMP	C	D	
Light and Sound	Sensitive Areas	CSU				X	X	Minimize noise and light pollution in sensitive areas (e.g., special status species habitat, developed campgrounds, and river corridors) using best available technology such as installing multi-cylinder pumps, installing hospital sound-reducing mufflers, and placing exhaust systems to direct noise away from the protection area/resource. In addition, reduce light pollution by using methods such as limiting height of light poles, timing of lighting operations (limiting lighting to times of darkness associated with drilling and work or maintenance operations), limiting wattage intensity, and constructing light shields. **Exception:** Consider exceptions if natural barriers or viewsheds would mitigate light and noise impacts. Modification: None Waiver: None
Light and Sound	Areas adjacent to Capitol Reef National Park	NSO				X	X	Allow NSO in areas adjacent to Capitol Reef National Park to minimize noise and light pollution. **Exception:** An exception may be granted if it is determined that technology such as installation of multi-cylinder pumps, hospital sound reducing mufflers, and placement of exhaust systems to direct noise away from the national park would meet mitigation objectives. Additionally, there would be a requirement to reduce light pollution by using methods such as limiting height of light poles, timing of lighting operations (limiting lighting to times of darkness associated with drilling and work or maintenance operations), limiting wattage

Resource of Concern	Applicable Area	Stipulation	Alternative					Stipulation Description
			N	A	Proposed RMP	C	D	
								intensity, and constructing light shields. Modification: None Waiver: None
Light and Sound	Areas adjacent to Capitol Reef National Park, Canyonlands National Park, and Glen Canyon National Recreation Area (NRA)	CSU				X	X	Minimize noise and light pollution adjacent to national park units using best available technology such as installation of multi-cylinder pumps, hospital sound reducing mufflers, and placement of exhaust systems to direct noise away from the national park. Additionally, there would be a requirement to reduce light pollution by using methods such as limiting height of light poles, timing of lighting operations (limiting lighting to times of darkness associated with drilling and work or maintenance operations), limiting wattage intensity, and constructing light shields. Movement of operations to mitigate sound and light impacts would be required to be at least 200 meters from the national park boundary for Visual Resource Management (VRM) Classes II, III, and IV. **Exception:** Exceptions may be granted if a determination is made that natural barriers or viewsheds would meet these mitigation objectives. Modification: None Waiver: None
Soil and Water	Slopes 30% or greater	CSU	X	X	X	X	X	Surface disturbing proposed projects involving construction on slopes greater than 30% would be avoided. If the action cannot be avoided, rerouted, or relocated than a proposed project would include an erosion control strategy, reclamation and a site plan with a detailed survey and design completed by a certified engineer. This proposed project must be approved by the BLM prior to construction and maintenance.

Resource of Concern	Applicable Area	Stipulation	Alternative					Stipulation Description
			N	A	Proposed RMP	C	D	
								Exception: None Modification: None Waiver: None
Soil and Water	Slopes greater than 50%	NSO	X					Allow NSO on slopes greater than 50%. **Exception:** Consider exceptions to NSO if the project would not cause undue or unnecessary degradation to surface resources. In addition, require the operator to submit a plan prior to commencing operations that addresses: • Erosion control strategies • GIS modeling • Proper survey and design by a certified engineer. **Modification:** Modifications may be granted if a more detailed analysis finds that surface disturbance activities could be allowed on slopes greater than 50% without accelerating erosion. Waiver: None
Soil and Water	Slopes greater than 40%	NSO		X		X	X	Allow NSO on slopes greater than 40%. **Exception:** Consider exceptions to NSO if the project would not cause undue or unnecessary degradation to surface resources. In addition, require the operator to submit a plan prior to commencing operations that addresses: • Erosion control strategies • GIS modeling • Proper survey and design by a certified engineer. **Modification:** Modifications may be granted if a more detailed analysis finds that surface disturbance activities could be allowed on slopes greater than 40% without

Resource of Concern	Applicable Area	Stipulation	Alternative					Stipulation Description
			N	A	Proposed RMP	C	D	
								accelerating erosion. Waiver: None
Soil and Water	Soils identified by National Resources Conservation Service (NRCS) as having high potential for wind erosion through research studies or monitoring	CSU	X	X	X	X	X	If surface disturbing activities cannot be avoided on areas identified as having high potential for wind erosion, require a plan of operation that addresses erosion control strategies or mitigation measures, such as signing along roadways. Exception: None **Modification:** Consider modification if site-specific environmental analysis shows that alternatives would cause undue or unnecessary degradation to surface resources and impacts from wind erosion would not affect long-term soil productivity, would not impact air quality in nearby Class I airsheds, nor pose safety hazards to recreationists or motorists. Waiver: None
Soil and Water	Riparian and wetland areas	CSU	X					Prohibit oil and gas exploration and development activities within 500 feet of live water. **Exception:** Consider exceptions if (1) there are no practical alternatives, (2) impacts can be fully mitigated, and (3) the action is designed to enhance the riparian resources. Modification: None Waiver: None
Soil and Water	Riparian and wetland areas	NSO		X	X			Maintain buffer zones of no surface disturbance and/or occupancy around natural springs. Base the size of the buffer on hydrological, riparian, and other factors necessary to protect the water quality of the springs. If these factors cannot be determined, maintain a 330-foot buffer zone from outer edge.

Resource of Concern	Applicable Area	Stipulation	Alternative					Stipulation Description
			N	A	Proposed RMP	C	D	
								Exception: Consider exceptions if it can be shown that (1) there are no practical alternatives to the disturbance, (2) all long-term impacts can be fully mitigated, and (3) the activity will benefit and enhance the riparian area. Consider compensatory mitigation where surface disturbance cannot be avoided within riparian wetland habitats on a site-specific basis. Modification: None Waiver: None
Soil and Water	Riparian and wetland areas	NSO				X	X	Maintain buffer zones of no surface disturbance and/or occupancy around natural springs. Base the size of the buffer on hydrological, riparian, and other factors necessary to protect the water quality of the springs. If these factors cannot be determined, maintain a 660-foot buffer zone from outer edge. **Exception:** Consider exceptions if it can be shown that (1) there are no practical alternatives to the disturbance, (2) all long-term impacts can be fully mitigated, and (3) the activity will benefit and enhance the riparian area. Consider compensatory mitigation where surface disturbance cannot be avoided within riparian wetland habitats on a site-specific basis. Modification: None Waiver: None
Soil and Water	Wetland soils or soils identified as having hydric soil properties	NSO	X	X	X	X	X	Allow NSO on wetland soils or soils identified as having hydric soil properties. **Exception:** Consider exceptions to NSO if a site-specific environmental analysis determines that other placement alternatives would cause undue or unnecessary degradation to resources. In addition, require

Resource of Concern	Applicable Area	Stipulation	Alternative					Stipulation Description
			N	A	Proposed RMP	C	D	
								the operator to submit a plan prior to commencing operations that addresses: • Erosion control strategies • Mitigation to protect surface from rutting, compaction, and displacement, and disruption of surface and subsurface hydrologic function • Mitigation or restoration measures to restore hydrologic function to site • Proper survey and design by a certified engineer. Modification: None Waiver: None
Special Status Species	Bald Eagle Nesting and Winter Roosting Habitat	Timing and CSU Notices	X	X	X	X	X	Implement measures outlined in Attachment A, Lease Notice for Bald Eagles. Exception: None Modification: None Waiver: None
Special Status Species	Mexican Spotted Owl Designated Critical Habitat	Timing and CSU Notices	X	X	X	X	X	Implement measures outlined in Attachment B, Lease Notice for Mexican Spotted Owls. Exception: None Modification: None Waiver: None
Special Status Species	Southwestern Willow Flycatcher Habitat	Timing and CSU Notices	X	X	X	X	X	Implement measures outlined in Attachment C, Lease Notice Southwestern Willow Flycatcher Conservation Measures. Exception: None Modification: None Waiver: None
Special Status Species	Colorado River Fish Critical Habitat	Timing and CSU Notices	X	X	X	X	X	Implement measures outlined in Attachment D, Lease Notice for Colorado River Fish. Exception: None Modification: None

Resource of Concern	Applicable Area	Stipulation	Alternative					Stipulation Description
			N	A	Proposed RMP	C	D	
								Waiver: None
Special Status Species	Historic or Occupied Utah Prairie Dog Habitat	CSU Notices	X	X	X	X	X	Implement measures outlined in Attachment E, Lease Notice for Utah Prairie Dog. Exception: None Modification: None Waiver: None
Special Status Species	Suitable Habitat for Federally-listed plant species	CSU Notices	X	X	X	X	X	Implement measures outlined in Attachment F, Lease Notice for Listed Plant Species. Exception: None Modification: None Waiver: None
Special Status Species	Known or Suspected California Condor Habitat	Timing and CSU	X	X	X	X	X	Implement measures outlined in Attachment G, Lease Notice for California Condor. Exception: None Modification: None Waiver: None
Special Status Species	Suitable or Occupied Habitat for the Barneby Reed Mustard.	Timing and CSU	X	X	X	X	X	Implement measures outlined in Attachment H, Lease Notice for Barneby Reed Mustard. Exception: None Modification: None Waiver: None
Special Status Species	Suitable or Occupied Habitat for the Last Chance Townsendia	Timing and CSU	X	X	X	X	X	Implement measures outlined in Attachment I, Lease Notice for Last Chance Townsendia. Exception: None Modification: None Waiver: None
Special Status Species	Suitable or Occupied Habitat for the Wright Fishhook Cactus	Timing and CSU	X	X	X	X	X	Implement measures outlined in Attachment J, Lease Notice for Wright Fishhook Cactus. Exception: None Modification: None

Resource of Concern	Applicable Area	Stipulation	Alternative					Stipulation Description
			N	A	Proposed RMP	C	D	
								Waiver: None
Special Status Species	Suitable or Occupied Habitat for the Winkler Pincushion Cactus	Timing and CSU	X	X	X	X	X	Implement measures outlined in Attachment K, Lease Notice for Winkler Pincushion Cactus. Exception: None Modification: None Waiver: None
Special Status Species	Suitable or Occupied Habitat for the San Rafael Cactus	Timing and CSU	X	X	X	X	X	Implement measures outlined in Attachment L, Lease Notice for San Rafael Cactus. Exception: None Modification: None Waiver: None
Special Status Species	Suitable or Occupied Habitat for the Ute Ladies' Tresses	Timing and CSU	X	X	X	X	X	Implement measures outlined in Attachment M, Lease Notice for Ute Ladies' Tresses. Exception: None Modification: None Waiver: None
Special Status Species	Suitable or Occupied Habitat for the Maguire Daisy	Timing and CSU	X	X	X	X	X	Implement measures outlined in Attachment N. Lease Notice for Maguire Daisy. Exception: None Modification: None Waiver: None
Special Status Species	Sage Grouse Leks	Timing and CSU	X					Prohibit surface disturbing activities near sage grouse leks from March 1 through July 15, to protect species sensitivity during lekking activities. **Exception:** Consider exceptions if the proposed activity would not impair the function or utility of the site for current or subsequent reproductive display, including daytime loafing/staging activities. **Modification:** Consider modifying the CSU stipulation or substituting with a timing

Resource of Concern	Applicable Area	Stipulation	Alternative					Stipulation Description
			N	A	Proposed RMP	C	D	
								limitation if the CSU area is nonessential to site utility or function, or if the proposed action could be conditioned to not impair the function or utility of the site for current or subsequent reproductive display, including daytime loafing/staging activities. **Waiver:** Consider waiving the stipulation if, in cooperation with the State of Utah Division of Wildlife Resources (UDWR), it is determined that the site has been permanently abandoned or unoccupied for a minimum of 5 years; or site conditions have changed and there is no reasonable likelihood of site occupation for a subsequent minimum period of 10 years.
Special Status Species	Sage Grouse Leks	Timing and CSU		X				Prohibit surface disturbing activities within one-quarter mile of sage grouse leks from March 15 through June 1 to protect species sensitivity during lekking activities. Any surface disturbing activity conducted outside this time frame may not result in an above-ground structure within one-quarter mile of sage grouse leks that are in place from March 15 through June 1. **Exception:** Consider exceptions if the proposed activity would not impair the function or utility of the site for current or subsequent reproductive display, including daytime loafing/staging activities. **Modification:** Consider modifying the CSU use stipulation or substituting with a timing limitation if the CSU area is nonessential to site utility or function, or if the proposed action could be conditioned to not impair the function or utility of the site for current or subsequent reproductive display, including daytime loafing/staging activities. **Waiver:** Consider waiving the stipulation if, in cooperation with UDWR, it is determined

Resource of Concern	Applicable Area	Stipulation	Alternative					Stipulation Description
			N	A	Proposed RMP	C	D	
								that the site has been permanently abandoned or unoccupied for a minimum of 5 years; or site conditions have changed and there is no reasonable likelihood of site occupation for a subsequent minimum period of 10 years.
Special Status Species	Sage Grouse Leks	Timing and CSU				X	X	Prohibit surface disturbing activities within 2 miles of sage grouse leks from March 15 through June 1 to protect species sensitivity during lekking activities. Any surface disturbing activity conducted outside this time frame may not result in an above-ground structure within 2 miles of sage grouse leks that is in place from March 15 through June 1. **Exception:** Consider exceptions if the proposed activity would not impair the function or utility of the site for current or subsequent reproductive display, including daytime loafing/staging activities. **Modification:** Consider modifying the CSU stipulation or substituting with a timing limitation if the CSU area is nonessential to site utility or function, or if the proposed action could be conditioned to not impair the function or utility of the site for current or subsequent reproductive display, including daytime loafing/staging activities. **Waiver:** Consider waiving the stipulation if, in cooperation with UDWR, it is determined that the site has been permanently abandoned or unoccupied for a minimum of 5 years; or site conditions have changed and there is no reasonable likelihood of site occupation for subsequent minimum period of 10 years.
Special Status Species	Sage Grouse Leks	NSO			X			Manage oil and gas leasing as open subject to major constraints (NSO) within ½ mile of

Resource of Concern	Applicable Area	Stipulation	Alternative					Stipulation Description
			N	A	Proposed RMP	C	D	
								greater sage-grouse leks. **Exception:** An exception may be granted by the Field Manager if the operator submits a plan that demonstrates that impacts from the proposed action can be adequately mitigated. **Modification:** The Field Manager may modify the boundaries of the stipulation area if (1) portions of the area do not include lek sites, (2) the lek site(s) have been completely abandoned or destroyed, or (3) occupied lek site(s) occur outside the current defined area, as determined by the BLM. **Waiver:** A waiver may be granted if there are no active lek site(s) in the leasehold and it is determined the site(s) have been completely abandoned or destroyed or occur outside current defined area, as determined by the BLM.
Special Status Species	Sage Grouse Brooding Habitat	TL	X					Prohibit surface disturbing activities within sage grouse brooding habitat from April 1 through June 15 to protect brooding and nesting activities. **Exception:** Consider exceptions if consultation with UDWR indicates that the proposed action can be conditioned to not affect nest attendance, egg, or chick survival, nor affect nesting success. Actions designed to enhance the long-term utility or availability of suitable sage grouse habitat may be exempted from this timing limitation. **Modification:** Consider modifying the size and shape of the timing limitation area if consultation with UDWR indicates that the actual habitat suitability for nesting is greater or less than the identified area. Consider modifying timing limitations based on studies documenting actual use.

Resource of Concern	Applicable Area	Stipulation	Alternative					Stipulation Description
			N	A	Proposed RMP	C	D	
								Waiver: Consider waiving the stipulation if UDWR determines that the described lands are incapable of serving the long-term requirements of sage grouse nesting habitat and that these ranges no longer warrant consideration as components of sage grouse habitat.
Special Status Species	Sage Grouse Brooding Habitat	TL			X			Allow no surface disturbing or otherwise disruptive activities within 2 miles of a greater sage-grouse lek from March 15 to July 15 to protect sage grouse breeding and brood-rearing habitat. **Exception:** An exception could be granted if surveys determine that the Greater sage-grouse lek in nesting and brood-rearing habitat is not occupied. An exception may also be granted by the Field Manager if the operator submits a plan that demonstrates that impacts from the proposed action can be adequately mitigated or it is determined the lek sites are not active. **Modification:** The Field Manager may modify the boundaries of the stipulation area if portions of the area do not include habitat or are outside the current defined area, as determined by the BLM. **Waiver:** A waiver may be granted if it is determined the habitat no longer exists or has been destroyed.
Special Status Species	Sage Grouse Brooding Habitat	TL				X	X	Prohibit long-term surface disturbing activities within sage grouse brooding/nesting habitat from April 1 through July 15 to protect brooding and nesting activities. **Exception:** Consider exceptions if an environmental analysis and consultation with UDWR indicates that the proposed action can be conditioned so as not to affect nest

Resource of Concern	Applicable Area	Stipulation	Alternative					Stipulation Description
			N	A	Proposed RMP	C	D	
								attendance, egg or chick survival, or nesting success. Actions designed to enhance the long-term utility or availability of suitable sage grouse habitat may be exempted from this timing limitation. **Modification:** Consider modifying the size and shape of the timing limitation area if consultation with UDWR indicates that the actual habitat suitability for nesting is greater or less than the identified area. Consider modifying timing limitations based on studies documenting actual use. **Waiver:** Consider waiving the stipulation if UDWR determines that the described lands are incapable of serving the long-term requirements of sage grouse nesting habitat and that these ranges no longer warrant consideration as components of sage grouse habitat.
Special Status Species	Sage Grouse Brooding Habitat	TL			X			Allow no surface disturbing or otherwise disruptive activities in greater sage-grouse winter habitat from December 15 through March 14. **Exception:** An exception could be granted if surveys determine that the Greater sage-grouse lek in winter habitat is not occupied, and that snow depths in the area allow continued sage-grouse use. An exception may also be granted by the Field Manager if the operator submits a plan that demonstrates that impacts from the proposed action can be avoided, sufficiently minimized, or adequately mitigated. **Modification:** The Field Manager may modify the boundaries of the stipulation area if portions of the area do not include habitat or are outside the current defined area, as determined by the BLM.

Resource of Concern	Applicable Area	Stipulation	Alternative					Stipulation Description
			N	A	Proposed RMP	C	D	
								Waiver: A waiver may be granted if it is determined the habitat no longer exists or has been destroyed.
Fish and Wildlife	Crucial Bison Habitat	TL	X					Restrict oil and gas exploration and development activities in crucial bison habit from December 1 through April 15. **Exception:** Consider exception if bison are not present or the lessee/operator can demonstrate that adverse impacts can be mitigated. Modification: None Waiver: None
Fish and Wildlife	Crucial Bison Habitat	TL			X	X	X	Restrict oil and gas exploration and development activities in crucial bison habit from November 1 through May 15. **Exception:** This stipulation does not apply to the maintenance and operation of existing and ongoing facilities. An exception may be granted by the Field Manager if the operator submits a plan that demonstrates that impacts from the proposed action can be adequately mitigated or it is determined the habitat is not being used during the winter period for any given year. **Modification:** The Field Manager may modify the boundaries of the stipulation area if (1) a portion of the area is not being used as crucial range by bison, (2) habitat outside of stipulation boundaries is being used as crucial range and needs to be protected, or (3) the migration patterns have changed causing a difference in the season of use. **Waiver:** A waiver may be granted if the crucial range habitat is unsuitable or unoccupied during winter months by bison and there is no reasonable likelihood of future winter range use.

Resource of Concern	Applicable Area	Stipulation	Alternative					Stipulation Description
			N	A	Proposed RMP	C	D	
Fish and Wildlife	Crucial and High Value Mule Deer and Elk Habitat	TL	X					Restrict oil and gas exploration and development in crucial and high-value mule deer and elk habitats from December 15 through May 15 to protect winter habitats and species sensitivity during fawning season. **Exception:** Consider exception if deer and/or elk are not present or if the lessee/operator can demonstrate that adverse impacts can be mitigated. Modification: None Waiver: None
Fish and Wildlife	Crucial and High Value Mule Deer and Elk Habitat	TL				X	X	Restrict surface disturbing activities in crucial and high-value mule deer and elk habitats from December 15 through April 15 to protect winter habitats. **Exception:** This stipulation does not apply to the maintenance and operation of existing and ongoing facilities. An exception may be granted by the Field Manager if the operator submits a plan that demonstrates that impacts from the proposed action can be adequately mitigated or it is determined the habitat is not being used during the winter period for any given year. **Modification:** The Field Manager may modify the boundaries of the stipulation area if (1) a portion of the area is not being used as crucial winter range by deer/elk, (2) habitat outside of stipulation boundaries is being used as crucial winter range and needs to be protected, or (3) the migration patterns have changed causing a difference in the season of use. **Waiver:** A waiver may be granted if the winter range habitat is unsuitable or unoccupied during winter months by deer/elk and there is no reasonable likelihood of

Resource of Concern	Applicable Area	Stipulation	Alternative					Stipulation Description
			N	A	Proposed RMP	C	D	
								future winter range use.
Fish and Wildlife	Crucial Mule Deer and Elk Habitat	TL			X			Restrict surface disturbing activities in crucial mule deer and elk habitats from December 15 through April 15 to protect winter habitats. **Exception:** This stipulation does not apply to the maintenance and operation of existing and ongoing facilities. An exception may be granted by the Field Manager if the operator submits a plan that demonstrates that impacts from the proposed action can be adequately mitigated or it is determined the habitat is not being used during the winter period for any given year. **Modification:** The Field Manager may modify the boundaries of the stipulation area if (1) a portion of the area is not being used as crucial winter range by deer/elk, (2) habitat outside of stipulation boundaries is being used as crucial winter range and needs to be protected, or (3) the migration patterns have changed causing a difference in the season of use. **Waiver:** A waiver may be granted if the winter range habitat is unsuitable or unoccupied during winter months by deer/elk and there is no reasonable likelihood of future winter range use.
Fish and Wildlife	Crucial Pronghorn Habitat	TL	X					Restrict oil and gas exploration and development activities in crucial pronghorn habitat from December 1 through April 30 to protect species sensitivity during kidding season. **Exception:** Consider exception if pronghorn are not present or the lessee/operator demonstrates that adverse impacts can be mitigated. Modification: None

Resource of Concern	Applicable Area	Stipulation	Alternative					Stipulation Description
			N	A	Proposed RMP	C	D	
								Waiver: None
Fish and Wildlife	Crucial Pronghorn Habitat	TL			X	X	X	Restrict surface disturbing activities in crucial pronghorn antelope habitat from May 15 through June 15 to protect species sensitivity during fawning season. **Exception:** The Field Manager may grant an exception if the operator submits a plan that demonstrates that impacts from the proposed action can be adequately mitigated. **Modification:** The Field Manager may modify the boundaries of the stipulation area (1) if a portion of the area is not being used as crucial pronghorn habitat during kidding season or (2) if habitat outside of stipulation boundaries is being used for crucial pronghorn habitat and needs to be protected. **Waiver:** A waiver may be granted if the habitat is determined as unsuitable for crucial pronghorn habitat and there is no reasonable likelihood of future use as crucial pronghorn habitat.
Fish and Wildlife	Crucial Desert Bighorn Sheep Habitat	TL			X	X	X	Prohibit surface disturbing activities in crucial desert bighorn sheep habitat from April 15 through June 15 to protect species sensitivity during lambing season. **Exception:** The Field Manager may grant an exception if the operator submits a plan that demonstrates that impacts from the proposed action can be adequately mitigated. **Modification:** The Field Manager may modify the boundaries of the stipulation area (1) if a portion of the area is not being used as crucial Desert bighorn sheep habitat during lambing season or (2) if habitat outside of stipulation boundaries is being

Resource of Concern	Applicable Area	Stipulation	Alternative					Stipulation Description
			N	A	Proposed RMP	C	D	
								used for crucial Desert bighorn sheep habitat and needs to be protected. **Waiver:** A waiver may be granted if the habitat is determined to be unsuitable for crucial Desert bighorn sheep habitat and there is no reasonable likelihood of future use as crucial Desert bighorn sheep habitat.
Cultural Resources	Bull Creek National Historic District	NSO	X	X	X	X	X	Allow NSO within the Bull Creek National Historic District. Exception: None Modification: None Waiver: None
Cultural Resources	Fish Creek Cove	NSO	X					Lease with NSO within the Fish Creek Cove cultural resource area. Exception: None Modification: None Waiver: None
Special status species	Sage grouse leks	NSO			X			Prohibit surface disturbing activities within 1/2 mile of sage grouse leks to protect species sensitivity around leks. Exception: None Modification: None Waiver: None
Scenic and Recreational Resources	Dirty Devil SRMA	NSO			X	X	X	Lease with NSO VRM Class II areas and canyon rims within viewshed of canyons (approximately one-quarter mile) to protect scenic values and opportunities for primitive and semi-primitive recreation. **Exception:** Consider exceptions if oil and gas exploration and development would not impair identified scenic and primitive or semi-primitive recreational resources. Modification: None Waiver: None.

Resource of Concern	Applicable Area	Stipulation	Alternative					Stipulation Description
			N	A	Proposed RMP	C	D	
Scenic and Recreational Resources	Lands Adjacent to Capitol Reef National Park	NSO				X	X	Lease with NSO-identified lands east of Capitol Reef National Park to protect scenic values and opportunities for primitive and semi-primitive recreation. **Exception:** Consider exceptions if oil and gas exploration and development would not impair identified scenic and primitive or semi-primitive recreational resources. Modification: None Waiver: None.
Visual Resources	VRM Class II Areas	CSU	X		X	X	X	Surface disturbing activities must meet the objectives of Visual Resource Management (VRM) Class II. **Exception:** The level of change to the landscape should be low; management activities may be seen, but should not attract the attention of the casual observer. Any change to the landscape must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape. Surface disturbing activities that are determined to be compatible and consistent with the protection or enhancement of the resource values are exempted. Also, recognized utility corridors are exempted only for utility projects, which would be managed according to VRM Class III objectives. Modification: None Waiver: None.
Lands	Cemeteries Culinary water sources Landfills—existing and closed Lands managed	NSO	X	X	X	X	X	Lease with NSO. Exception: None Modification: None Waiver: None

Resource of Concern	Applicable Area	Stipulation	Alternative					Stipulation Description
			N	A	Proposed RMP	C	D	
	under Recreation and Public Purpose Act leases Sites listed on the National Register of Historic Places Incorporated municipalities Developed recreation sites BLM administrative sites							
Non-WSA lands with wilderness characteristics	Lands managed as non-WSA lands with wilderness characteristics (78,600 acres)	NSO			X			Lease with NSO the lands managed as non-WSA lands with wilderness characteristics (78,600 acres) to protect, preserve, and maintain their wilderness characteristics. Exception: None Modification: None Waiver: None
Special Designations (Relict Vegetation)	North Caineville Mesa Area of Critical Environmental Concern (ACEC) (part of Badlands ACEC in Alternative C)	NSO	X		X			Allow NSO within North Caineville Mesa ACEC to protect relict vegetation. Exception: None Modification: None Waiver: None
Special Designations (Relict Vegetation)	South Caineville Mesa ACEC (part of Badlands ACEC in Alternative C)	NSO	X					Allow NSO within South Caineville Mesa ACEC to protect relict vegetation. Exception: None Modification: None Waiver: None
Special Designations (Natural Systems/	Gilbert Badlands ACEC (part of Badlands ACEC in Alternative C)	NSO	X					Allow NSO within Gilbert Badlands ACEC to protect relict vegetation. Exception: None

Resource of Concern	Applicable Area	Stipulation	Alternative					Stipulation Description
			N	A	Proposed RMP	C	D	
Processes)								Modification: None Waiver: None
Special Designations (Scenic Resources)	Dirty Devil/North Wash ACEC	NSO				X	X	Lease VRM Class II areas within the ACEC with NSO stipulation to protect scenic values. **Exception:** Consider exceptions on a case-by-case basis if oil and gas exploration and development would not impair identified scenic values. Modification: None Waiver: None.
Special Designations (Scenic Resources)	Fremont Gorge/Cockscomb ACEC	NSO				X	X	Lease VRM Class II areas within the ACEC with NSO stipulation to protect scenic values. **Exception:** Consider exceptions on a case-by-case basis if oil and gas exploration and development would not impair identified scenic values. Modification: None Waiver: None.
Special Designations (Scenic Resources)	Horseshoe Canyon ACEC	NSO				X	X	Lease VRM Class II areas within the ACEC with NSO stipulation to protect scenic values. **Exception:** Consider exceptions if oil and gas exploration and development would not impair identified scenic values. Modification: None Waiver: None.
Special Designations (Scenic Resources)	Little Rockies ACEC	NSO				X	X	Lease VRM Class II areas within the ACEC with NSO stipulation to protect scenic values. **Exception:** Consider exceptions if oil and gas exploration and development would not impair identified scenic values.

Resource of Concern	Applicable Area	Stipulation	Alternative					Stipulation Description
			N	A	Proposed RMP	C	D	
								Modification: None Waiver: None.
Special Designations (Natural Systems and Special Status Species)	Rainbow Hills ACEC	NSO				X	X	Lease ACEC with NSO stipulation to protect special status and endemic plants and the naturally functioning system from major human disturbances. Exception: None Modification: None Waiver: None

Attachment A—Lease Notice for Bald Eagle

Utah's Threatened and Endangered Species Notices

Lease Notice – Bald Eagle

The Lessee/Operator is given notice that the lands in this parcel contains nesting/winter roost habitat for the bald eagle, a federally listed species. Avoidance or use restrictions may be placed on portions of the lease. Application of appropriate measures will depend on whether the action is temporary or permanent, and whether it occurs within or outside the bald eagle breeding or roosting season. A temporary action is completed prior to the following breeding or roosting season, leaving no permanent structures and resulting in no permanent habitat loss. A permanent action continues for more than one breeding or roosting season and/or causes a loss of eagle habitat or displaces eagles through disturbances (e.g., creation of a permanent structure). The following avoidance and minimization measures have been designed to ensure activities carried out on the lease are in compliance with the Endangered Species Act (ESA). Integration of, and adherence to, these measures will facilitate review and analysis of any submitted permits under the authority of this lease. Following these measures could reduce the scope of ESA Section 7 consultation at the permit stage.

Current avoidance and minimization measures include the following:

1. Surveys will be required prior to operations, unless species occupancy and distribution information is complete and available. All surveys must be conducted by qualified individual(s), and be conducted according to protocol.
2. Lease activities will require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures will be evaluated and, if necessary, Section 7 consultation reinitiated.
3. Water production will be managed to ensure maintenance or enhancement of riparian habitat.
4. Temporary activities within 1.0 mile of nest sites will not occur during the breeding season of January 1 to August 31, unless the area has been surveyed according to protocol and determined to be unoccupied.
5. Temporary activities within 0.5 miles of winter roost areas, e.g., cottonwood galleries, will not occur during the winter roost season of November 1 to March 31, unless the area has been surveyed according to protocol and determined to be unoccupied.
6. No permanent infrastructure will be placed within 1.0 mile of nest sites.
7. No permanent infrastructure will be placed within 0.5 miles of winter roost areas.
8. Remove big game carrion to 100 feet from on lease roadways occurring within bald eagle foraging range.
9. Avoid loss or disturbance to large cottonwood gallery riparian habitats.
10. Where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and eliminate drilling in suitable habitat. Utilize directional drilling to avoid direct impacts to large cottonwood gallery riparian habitats. Ensure that such directional drilling does not intercept or degrade alluvial aquifers.
11. All areas of surface disturbance within riparian areas and/or adjacent uplands should be re-vegetated with native species.

Additional measures may also be employed to avoid or minimize effects to the species between the lease sale stage and lease development stage. These additional measures will be developed and implemented in consultation with the U.S. Fish and Wildlife Service to ensure continued compliance with the ESA.

Attachment B—Lease Notice for Mexican Spotted Owl

Utah's Threatened and Endangered Species Notices

Lease Notice – Mexican Spotted Owl

The Lessee/Operator is given notice that the lands in this lease contain suitable habitat for Mexican spotted owl, a federally listed species. **Insert the following if lease contains Designated Critical Habitat:** *[The Lessee/Operator is given notice that the lands in this lease contain Designated Critical Habitat for the Mexican spotted owl, a Federally listed species. Critical habitat was designated for the Mexican spotted owl on August 31, 2004 (69 FR 53181-53298).]* Avoidance or use restrictions may be placed on portions of the lease. Application of appropriate measures will depend on whether the action is temporary or permanent, and whether it occurs within or outside the owl nesting season. A temporary action is completed prior to the following breeding season, leaving no permanent structures and resulting in no permanent habitat loss. A permanent action continues for more than one breeding season and/or causes a loss of owl habitat or displaces owls through disturbances (e.g., creation of a permanent structure). The following avoidance and minimization measures have been designed to ensure activities carried out on the lease are in compliance with the Endangered Species Act (ESA). Integration of, and adherence to, these measures, will facilitate review and analysis of any submitted permits under the authority of this lease. Following these measures could reduce the scope of ESA Section 7 consultation at the permit stage.

Current avoidance and minimization measures include the following:

1. Surveys will be required prior to operations, unless species occupancy and distribution information is complete and available. All surveys must be conducted by qualified individual(s).
2. Assess habitat suitability for both nesting and foraging using accepted habitat models in conjunction with field reviews. Apply the conservation measures below if project activities occur within 0.5 mile of suitable owl habitat. Determine potential effects of actions to owls and their habitat.
    a. Document type of activity, acreage and location of direct habitat impacts, type and extent of indirect impacts relative to location of suitable owl habitat.
    b. Document if the action is temporary or permanent.
3. Lease activities will require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures will be evaluated and, if necessary, Section 7 consultation reinitiated.
4. Water production will be managed to ensure maintenance or enhancement of riparian habitat.
5. Where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and eliminate drilling in canyon habitat suitable for Mexican spotted owl nesting.
6. For all temporary actions that may impact owls or suitable habitat:
    a. If the action occurs entirely outside of the owl breeding season (March 1 to August 31) and leaves no permanent structure or permanent habitat disturbance, action can proceed without an occupancy survey.
    b. If the action will occur during a breeding season, survey for owls prior to commencing activity. If owls are found, activity must be delayed until outside of the breeding season.
    c. Rehabilitate access routes created by the project through such means as raking out scars, revegetation, gating access points, etc.
7. For all permanent actions that may impact owls or suitable habitat:
    a. Survey two consecutive years for owls according to accepted protocol prior to commencing activities.
    b. If owls are found, no actions will occur within 0.5 mile of identified nest site. If nest site is unknown, no activity will occur within the designated Protected Activity Center (PAC).
    c. Avoid drilling and permanent structures within 0.5 mile of suitable habitat unless surveyed and not occupied.
    d. Reduce noise emissions (e.g., use hospital-grade mufflers) to 45 dBA at 0.5 mile from suitable habitat, including canyon rims. Placement of permanent noise-generating facilities should be determined by a noise analysis to ensure noise does not encroach upon a 0.5 mile buffer for suitable habitat, including canyon rims.
    e. Limit disturbances to and within suitable habitat by staying on approved routes.
    f. Limit new access routes created by the project.

Additional measures to avoid or minimize effects to the species may be developed and implemented in consultation with the U.S. Fish and Wildlife Service between the lease sale stage and lease development stage to ensure continued compliance with the ESA.

Attachment C—Lease Notice for Southwestern Willow Flycatcher

Utah's Threatened and Endangered Species Notices

Lease Notice – Southwestern Willow Flycatcher

The Lessee/Operator is given notice that the lands in this parcel contain riparian habitat that falls within the range for southwestern willow flycatcher, a federally listed species. Avoidance or use restrictions may be placed on portions of the lease. Application of appropriate measures will depend on whether the action is temporary or permanent, and whether it occurs within or outside the nesting season. A temporary action is completed prior to the following breeding season leaving no permanent structures and resulting in no permanent habitat loss. A permanent action continues for more than one breeding season and/or causes a loss of habitat or displaces flycatchers through disturbances (e.g., creation of a permanent structure). The following avoidance and minimization measures have been designed to ensure activities carried out on the lease are in compliance with the Endangered Species Act (ESA). Integration of, and adherence to, these measures, will facilitate review and analysis of any submitted permits under the authority of this lease. Following these measures could reduce the scope of ESA Section 7 consultation at the permit stage.

Current avoidance and minimization measures include the following:

1. Surveys will be required prior to operations, unless species occupancy and distribution information is complete and available. All surveys must be conducted by qualified individual(s), and be conducted according to protocol.
2. Lease activities will require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures will be evaluated and, if necessary, Section 7 consultation reinitiated.
3. Water production will be managed to ensure maintenance or enhancement of riparian habitat.
4. Where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and eliminate drilling in suitable riparian habitat. Ensure that such directional drilling does not intercept or degrade alluvial aquifers.
5. Drilling activities will maintain a 300 ft. buffer from suitable riparian habitat year long.
6. Drilling activities within 0.25 mile of occupied breeding habitat will not occur during the breeding season of May 1 to August 15.
7. Ensure that water extraction or disposal practices do not result in change of hydrologic regime that would result in loss or degradation of riparian habitat.
8. Revegetate with native species all areas of surface disturbance within riparian areas and/or adjacent uplands.

Additional measures to avoid or minimize effects to the species may be developed and implemented in consultation with the U.S. Fish and Wildlife Service between the lease sale stage and lease development stage to ensure continued compliance with the ESA.

Attachment D—Lease Notice for Colorado River Fish

Utah's Threatened and Endangered Species Notices

Lease Notice – Endangered Fish of the Upper Colorado River Drainage Basin

The Lessee/Operator is given notice that the lands in this parcel contain Critical Habitat for the Colorado River fish (bonytail chub, humpback chub, Colorado pike minnow, and razorback sucker, listed as endangered under the Endangered Species Act (ESA), or these parcels have watersheds that are tributary to designated habitat. Critical habitat was designated for the four endangered Colorado River fishes on March 21, 1994 (59 FR 13374-13400). Designated critical habitat for all the endangered fishes includes those portions of the 100-year floodplain that contain primary constituent elements necessary for survival of the species. Avoidance or use restrictions may be placed on portions of the lease. The following avoidance and minimization measures have been designed to ensure activities carried out on the lease comply with the ESA. Integration of, and adherence to, these measures will facilitate review and analysis of any submitted permits under the authority of this lease. Following these measures could reduce the scope of ESA Section 7 consultation at the permit stage.

Current avoidance and minimization measures include the following:

1. Surveys will be required prior to operations, unless species occupancy and distribution information is complete and available. All surveys must be conducted by qualified individual(s).
2. Lease activities will require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures will be evaluated and, if necessary, Section 7 consultation reinitiated.
3. Water production will be managed to ensure maintenance or enhancement of riparian habitat.
4. Avoid loss or disturbance of riparian habitats.
5. Where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and eliminate drilling in suitable riparian habitat. Ensure that such directional drilling does not intercept or degrade alluvial aquifers.
6. Conduct watershed analysis for leases in designated critical habitat and overlapping major tributaries in order to determine toxicity risk from permanent facilities.
7. Implement the Utah Oil and Gas Pipeline Crossing Guidance (from BLM National Science and Technology Center).
8. Drilling will not occur within 100-year floodplains of rivers or tributaries to rivers that contain listed fish species or critical habitat.
9. In areas adjacent to 100-year flood plains, particularly in systems prone to flash floods, analyze the risk for flash floods to impact facilities, and use closed loop drilling, and pipeline burial or suspension according to the Utah Oil and Gas Pipeline Crossing Guidance, to minimize the potential for equipment damage and resulting leaks or spills.

Water depletions from *any* portion of the Upper Colorado River drainage basin above Lake Powell are considered to adversely affect or adversely modify the critical habitat of the four resident endangered fish species, and must be evaluated with regard to the criteria described in the Upper Colorado River Endangered Fish Recovery Program. Formal consultation with U.S. Fish and Wildlife Service (USFWS) is required for all depletions. All depletion amounts must be reported to BLM.

Additional measures to avoid or minimize effects to the species may be developed and implemented in consultation with the USFWS between the lease sale stage and lease development stage to ensure continued compliance with the ESA.

Attachment E—Lease Notice for Utah Prairie Dog

Utah's Threatened and Endangered Species Notices

Lease Notice – Utah Prairie Dog

The Lessee/Operator is given notice that lands in this lease may contain historic and/or occupied Utah prairie dog habitat, a threatened species under the Endangered Species Act (ESA). Avoidance or use restrictions may be placed on portions of the lease. Application of appropriate measures will depend on whether the action is temporary or permanent, and whether it occurs when prairie dogs are active or hibernating. A temporary action is completed prior to the following active season leaving no permanent structures and resulting in no permanent habitat loss. A permanent action continues for more than one activity/hibernation season and/or causes a loss of Utah prairie dog habitat or displaces prairie dogs through disturbances (e.g., creation of a permanent structure). The following avoidance and minimization measures have been designed to ensure activities carried out on the lease are in compliance with the ESA. Integration of, and adherence to, these measures will facilitate review and analysis of any submitted permits under the authority of this lease. Following these measures could reduce the scope of ESA Section 7 consultation at the permit stage.

Current avoidance and minimization measures include the following:

1. Surveys will be required prior to operations unless species occupancy and distribution information is complete and available. All surveys must be conducted by qualified individual(s).
2. Lease activities will require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures will be evaluated and, if necessary, Section 7 consultation reinitiated.
3. Where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and eliminate drilling in prairie dog habitat.
4. Surface occupancy or other surface disturbing activity will be avoided within 0.5 mile of active prairie dog colonies.
5. Permanent surface disturbance or facilities will be avoided within 0.5 mile of potentially suitable, unoccupied prairie dog habitat, identified and mapped by Utah Division of Wildlife Resources since 1976.
6. The lessee/operator should consider if fencing infrastructure on well pad, e.g., drill pads, tank batteries, and compressors, would be needed to protect equipment from burrowing activities. In addition, the operator should consider if future surface disturbing activities would be required at the site.
7. Within occupied habitat, set a 25 mph speed limit on operator-created and maintained roads.
8. Limit disturbances to and within suitable habitat by staying on designated routes.
9. Limit new access routes created by the project.

Additional measures to avoid or minimize effects to the species may be developed and implemented in consultation with the U.S. Fish and Wildlife Service between the lease sale stage and lease development stage to ensure continued compliance with the ESA.

Attachment F—Lease Notice for Listed Plant Species

Utah's Threatened and Endangered Species Notices

Lease Notice – Listed Plant Species

The Lessee/Operator is given notice that the lands in this parcel contain suitable habitat for federally listed plant species under the Endangered Species Act (ESA). The following avoidance and minimization measures have been developed to facilitate review and analysis of any submitted permits under the authority of this lease

1. Site inventories:
    a. Must be conducted to determine habitat suitability
    b. Are required in known or potential habitat for all areas proposed for surface disturbance before initiating project activities, at a time when the plant can be detected, and during appropriate flowering periods
    c. Should include documentation on individual plant locations and suitable habitat distributions
    d. Must have qualified individuals conduct all surveys.
2. Lease activities will require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures will be evaluated and, if necessary, Section 7 consultation reinitiated.
3. Project activities must be designed to avoid direct disturbance to populations and to individual plants:
    a. Designs will avoid concentrating water flows or sediments into plant occupied habitat.
    b. Construction will occur downslope of plants and populations where feasible; if well pads and roads must be sited upslope, buffers of 100 feet minimum between surface disturbances and plants and populations will be incorporated.
    c. Where populations occur within 200 feet of well pads, a buffer or fence will be established between the individuals or groups of individuals and the well pads during and post-construction.
    d. Areas for avoidance will be visually identifiable in the field, e.g., flagging, temporary fencing, rebar.
    e. For surface pipelines, a 10-foot buffer will be used from any plant locations:
        i. If on a slope, stabilizing construction techniques will be used to ensure the pipelines do not move toward the population.
4. For riparian/wetland-associated species, e.g. Ute ladies'-tresses, avoid loss or disturbance of riparian habitats:
    a. Water extraction or disposal practices will not result in change of hydrologic regime.
5. Disturbances to and within suitable habitat will be limited by staying on designated routes.
6. New access routes created by the project will be limited.
7. To limit OHV travel in sensitive areas, signing will be placed appropriately.
8. Dust abatement practices will be implemented near occupied plant habitat.
9. All disturbed areas will be revegetated with native species composed of species indigenous to the area.
10. Post-construction monitoring for invasive species will be required.
11. Where technically and economically feasible, directional drilling or multiple wells will be used from the same pad to reduce surface disturbance and eliminate drilling in plant habitat. Ensure that such directional drilling does not intercept or degrade alluvial aquifers.
12. Lease activities will require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures will be evaluated and, if necessary, Section 7 consultation reinitiated.

Additional measures to avoid or minimize effects to the species may be developed and implemented in consultation with the U.S. Fish and Wildlife Service between the lease sale stage and lease development stage to ensure continued compliance with the ESA.

Attachment G—Lease Notice for California Condor

Utah's Threatened and Endangered Species Notices

Lease Notice – California Condor

The Lessee/Operator is given notice that the lands located in this parcel contain potential habitat for the California Condor, a federally listed species. Avoidance or use restrictions may be placed on portions of the lease if the area is known or suspected to be used by condors. Application of appropriate measures will depend on whether the action is temporary or permanent, and whether it occurs within or outside potential habitat. A temporary action is completed prior to the following important season of use, leaving no permanent structures and resulting in no permanent habitat loss. This would include consideration for habitat functionality. A permanent action continues for more than one season of habitat use, and/or causes a loss of condor habitat function or displaces condors through continued disturbance (i.e. creation of a permanent structure requiring repetitious maintenance, or emits disruptive levels of noise).

The following avoidance and minimization measures have been designed to ensure activities carried out on the lease are in compliance with the Endangered Species Act (ESA). Integration of, and adherence to these measures will facilitate review and analysis of any submitted permits under the authority of this lease. Following these measures could reduce the scope of ESA, Section 7 consultation at the permit stage.

Current avoidance and minimization measures include the following:

1. Surveys will be required prior to operations unless species occupancy and distribution information is complete and available. All Surveys must be conducted by qualified individual(s) approved by the BLM, and must be conducted according to approved protocol.
2. If surveys result in positive identification of condor use, all lease activities will require monitoring throughout the duration of the project to ensure desired results of applied mitigation and protection. Minimization measures will be evaluated during development and, if necessary, Section 7 consultation may be reinitiated.
3. Temporary activities within 1.0 mile of nest sites will not occur during the breeding season.
4. Temporary activities within 0.5 miles of established roosting sites or areas will not occur during the season of use, August 1 to November 31, unless the area has been surveyed according to protocol and determined to be unoccupied.
5. No permanent infrastructure will be placed within 1.0 mile of nest sites.
6. No permanent infrastructure will be placed within 0.5 miles of established roosting sites or areas.
7. Remove big game carrion to 100 feet from on lease roadways occurring within foraging range.
8. Where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and eliminate drilling in suitable habitat Utilize directional drilling to avoid direct impacts to large cottonwood gallery riparian habitats. Ensure that such directional drilling does not intercept or degrade alluvial aquifers.
9. Reinitiation of section 7 consultation with the Service will be sought immediately if mortality or disturbance to California condors is anticipated as a result of project activities. Additional site-specific measures may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with the U.S. Fish and Wildlife Service to ensure continued compliance with the ESA.

Additional measures may also be employed to avoid or minimize effects to the species between the lease sale and lease development stages. These additional measures will be developed and implemented in consultation with the U.S. Fish and Wildlife Service to ensure continued compliance with the ESA.

Attachment H—Lease Notice for Barneby Reed Mustard

Utah's Threatened and Endangered Species Notices

Lease Notice – Barneby Reed-Mustard

In order to minimize effects to the federally threatened Barneby reed-mustard, the Bureau of Land Management (BLM), in coordination with the U.S. Fish and Wildlife Service (Service), has developed the following avoidance and minimization measures. Implementation of these measures will help ensure the activities carried out during oil and gas development (including but not limited to drilling, production, and maintenance operations) are in compliance with the Endangered Species Act (ESA). For the purposes of this document, the follow terms are so defined:

- *Potential habitat* is defined as areas which satisfy the broad criteria of the species habitat description; usually determined by preliminary, in-house assessment.
- *Suitable habitat* is defined as areas which contain or exhibit the specific components or constituents necessary for plant persistence; determined by field inspection and/or surveys; may or may not contain clay reed-mustard; habitat descriptions can be found in Federal Register Notice and species recovery plan links at <http://www.fws.gov/endangered/wildlife.html>.
- *Occupied habitat* is defined as areas currently or historically known to support clay reed-mustard; synonymous with "known habitat."

The following avoidance and minimization measures should be included in the Plan of Development:

1. Pre-project habitat assessments will be completed across 100% of the project disturbance area within potential habitat[1] prior to any ground disturbing activities (including ATV use) to determine if suitable Barneby reed-mustard habitat is present.

2. Site inventories will be conducted within suitable habitat to determine occupancy. Where standard surveys are technically infeasible and otherwise hazardous due to topography, slope, etc., suitable habitat will be assessed and mapped for avoidance (hereafter, "avoidance areas"); in such cases, in general, 300' buffers will be maintained between surface disturbance and avoidance areas. However, site specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat. Where conditions allow, inventories:
   a. Must be conducted by qualified individual(s) and according to BLM and Service accepted survey protocols,
   b. Will be conducted in suitable and occupied habitat for all areas proposed for surface disturbance prior to initiation of project activities and within the same growing season, at a time when the plant can be detected (usually April 15th to June 5th, however, surveyors should verify that the plant is flowering by contacting a BLM or FWS botanist or demonstrating that the nearest known population is in flower),
   c. Will occur within 300' from the centerline of the proposed right-of-way for surface pipelines or roads; and within 300' from the perimeter of disturbance for the proposed well pad including the well pad,
   d. Will include, but not be limited to, plant species lists and habitat characteristics, and
   e. Will be valid until April 15th the following year.

3. Design project infrastructure to minimize impacts within suitable habitat:
   a. Where standard surveys are technically infeasible, infrastructure and activities will avoid all suitable habitat (avoidance areas) and incorporate 300' buffers, in general; however, site specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat,
   b. Reduce well pad size to the minimum needed, without compromising safety,
   c. Where technically and economically feasible, use directional drilling or multiple wells from the same pad,
   d. Limit new access routes created by the project,
   e. Roads and utilities should share common right-of-ways where possible,
   f. Reduce the width of right-of-ways and minimize the depth of excavation needed for the road bed; where feasible, use the natural ground surface for the road within habitat,
   g. Place signing to limit off-road travel in sensitive areas, and
   h. Stay on designated routes and other cleared/approved areas.
   i. All disturbed areas will be revegetated with native species comprised of species indigenous to the area and non-native species that are not likely to invade other areas.

Utah's Threatened and Endangered Species Notices

4. Within occupied habitat, project infrastructure will be designed to avoid direct disturbance and minimize indirect impacts to populations and to individual plants:
   a. Follow the above recommendations (#3) for project design within suitable habitats,
   b. To avoid water flow and/or sedimentation into occupied habitat and avoidance areas, silt fences, hay bales, and similar structures or practices will be incorporated into the project design; appropriate placement of fill is encouraged,
   d. Construction of roads will occur such that the edge of the right of way is at least 300' from any plant and 300' from avoidance areas,
   e. Roads will be graveled within occupied habitat; the operator is encouraged to apply water for dust abatement to such areas from April 15th to June 5th (flowering period); dust abatement applications will be comprised of water only,
   f. The edge of the well pad should be located at least 300' away from plants and avoidance areas, in general; however, site specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat,
   g. Surface pipelines will be laid such that a 300' buffer exists between the edge of the right of way and plants and 300' between the edge of right of way and avoidance areas; use stabilizing and anchoring techniques when the pipeline crosses suitable habitat to ensure pipelines don't move towards the population; site specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat,
   h. Construction activities will not occur from April 15th through June 5th within occupied habitat,
   i. Before and during construction, areas for avoidance should be visually identifiable in the field, e.g., flagging, temporary fencing, rebar, etc.,
   j. Place produced oil, water, or condensate tanks in centralized locations, away from occupied habitat, and
   k. Minimize the disturbed area of producing well locations through interim and final reclamation. Reclaim well pads following drilling to the smallest area possible.

5. Occupied Barneby reed-mustard habitats within 300' of the edge of the surface pipelines' right of ways, 300' of the edge of the roads' right of ways, and 300' from the edge of the well pad shall be monitored for a period of three years after ground disturbing activities. Monitoring will include annual plant surveys to determine plant and habitat impacts relative to project facilities. Annual reports shall be provided to the BLM and the Service. To ensure desired results are being achieved, minimization measures will be evaluated and may be changed after a thorough review of the monitoring results and annual reports during annual meetings between the BLM and the Service.

6. Reinitiation of section 7 consultation with the Service will be sought immediately if any loss of plants or occupied habitat for the Barneby reed-mustard is anticipated as a result of project activities. Additional site-specific measures may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with the U.S. Fish and Wildlife Service to ensure continued compliance with the ESA.

Attachment I—Lease Notice for Last Chance Townsendia

Utah's Threatened and Endangered Species Notices

Lease Notice – Last Chance Townsendia (*Townsendia aprica*)

In order to minimize effects to the federally threatened Last Chance townsendia, the Bureau of Land Management (BLM), in coordination with the U.S. Fish and Wildlife Service (Service), has developed the following avoidance and minimization measures. Implementation of these measures will help ensure the activities carried out during oil and gas development (including but not limited to drilling, production, and maintenance operations) are in compliance with the Endangered Species Act (ESA). For the purposes of this document, the follow terms are so defined:

- *Potential habitat* is defined as areas which satisfy the broad criteria of the species habitat description; usually determined by preliminary, in-house assessment.
- *Suitable habitat* is defined as areas which contain or exhibit the specific components or constituents necessary for plant persistence; determined by field inspection and/or surveys; may or may not contain clay reed-mustard; habitat descriptions can be found in Federal Register Notice and species recovery plan links at <http://www.fws.gov/endangered/wildlife.html>.
- *Occupied habitat* is defined as areas currently or historically known to support clay reed-mustard; synonymous with "known habitat."

The following avoidance and minimization measures should be included in the Plan of Development:

1. Pre-project habitat assessments will be completed across 100% of the project disturbance area within potential habitat prior to any ground disturbing activities to determine if suitable Last Chance townsendia habitat is present.

2. Site inventories will be conducted within suitable habitat to determine occupancy. Where standard surveys are technically infeasible and otherwise hazardous due to topography, slope, etc., suitable habitat will be assessed and mapped for avoidance (hereafter, "avoidance areas"); in such cases, in general, 300' buffers will be maintained between surface disturbance and avoidance areas. However, site specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat. Where conditions allow, inventories:
   a. Must be conducted by qualified individual(s) and according to BLM and Service accepted survey protocols,
   b. Will be conducted in suitable and occupied habitat for all areas proposed for surface disturbance prior to initiation of project activities and within the same growing season, at a time when the plant can be detected (usually April 1st to May 30th, however, surveyors should verify that the plant is flowering by contacting a BLM or FWS botanist or demonstrating that the nearest known population is in flower),
   c. Will occur within 300' from the centerline of the proposed right-of-way for surface pipelines or roads; and within 300' from the perimeter of disturbance for the proposed well pad including the well pad,
   d. Will include, but not be limited to, plant species lists and habitat characteristics, and
   e. Will be valid until April 1st the following year.

3. Design project infrastructure to minimize impacts within suitable habitat:
   a. Where standard surveys are technically infeasible, infrastructure and activities will avoid all suitable habitat (avoidance areas) and incorporate 300' buffers, in general; however, site specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat,
   b. Reduce well pad size to the minimum needed, without compromising safety,
   c. Where technically and economically feasible, use directional drilling or multiple wells from the same pad,
   d. Limit new access routes created by the project,
   e. Roads and utilities should share common right-of-ways where possible,
   f. Reduce the width of right-of-ways and minimize the depth of excavation needed for the road bed; where feasible, use the natural ground surface for the road within habitat,
   g. Place signing to limit off-road travel in sensitive areas, and
   h. Stay on designated routes and other cleared/approved areas.
   i. All disturbed areas will be revegetated with native species comprised of species indigenous to the area and non-native species that are not likely to invade other areas.

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4. Within occupied habitat, project infrastructure will be designed to avoid direct disturbance and minimize indirect impacts to populations and to individual plants:
   a. Follow the above recommendations (#3) for project design within suitable habitats,
   b. To avoid water flow and/or sedimentation into occupied habitat and avoidance areas, silt fences, hay bales, and similar structures or practices will be incorporated into the project design; appropriate placement of fill is encouraged,
   d. Construction of roads will occur such that the edge of the right of way is at least 300' from any plant and 300' from avoidance areas,
   e. Roads will be graveled within occupied habitat; the operator is encouraged to apply water for dust abatement to such areas from April 15st to June 30th (flowering period); dust abatement applications will be comprised of water only,
   f. The edge of the well pad should be located at least 300' away from plants and avoidance areas, in general; however, site specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat,
   g. Surface pipelines will be laid such that a 300' buffer exists between the edge of the right of way and plants and 300' between the edge of right of way and avoidance areas; use stabilizing and anchoring techniques when the pipeline crosses suitable habitat to ensure pipelines don't move towards the population; site specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat,
   h. Construction activities will not occur from April 15th through June 30th within occupied habitat,
   i. Before and during construction, areas for avoidance should be visually identifiable in the field, e.g., flagging, temporary fencing, rebar, etc.,
   j. Place produced oil, water, or condensate tanks in centralized locations, away from occupied habitat, and
   k. Minimize the disturbed area of producing well locations through interim and final reclamation. Reclaim well pads following drilling to the smallest area possible.

5. Occupied Last Chance townsendia habitats within 300' of the edge of the surface pipelines' right of ways, 300' of the edge of the roads' right of ways, and 300' from the edge of the well pad shall be monitored for a period of three years after ground disturbing activities. Monitoring will include annual plant surveys to determine plant and habitat impacts relative to project facilities. Annual reports shall be provided to the BLM and the Service. To ensure desired results are being achieved, minimization measures will be evaluated and may be changed after a thorough review of the monitoring results and annual reports during annual meetings between the BLM and the Service.

6. Reinitiation of section 7 consultation with the Service will be sought immediately if any loss of plants or occupied habitat for the Last Chance Townsendia is anticipated as a result of project activities. Additional site-specific measures may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with the U.S. Fish and Wildlife Service to ensure continued compliance with the ESA.

Attachment J—Lease Notice for Wright Fishhook Cactus

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Lease Notice – Wright Fishhook Cactus (*Sclerocactus wrightii*)

In order to minimize effects to the federally endangered Wright fishhook cactus, the Bureau of Land Management (BLM), in coordination with the U.S. Fish and Wildlife Service (Service), has developed the following avoidance and minimization measures. Implementation of these measures will help ensure the activities carried out during oil and gas development (including but not limited to drilling, production, and maintenance operations) are in compliance with the Endangered Species Act (ESA). For the purposes of this document, the follow terms are so defined:

- *Potential habitat* is defined as areas which satisfy the broad criteria of the species habitat description; usually determined by preliminary, in-house assessment.
- *Suitable habitat* is defined as areas which contain or exhibit the specific components or constituents necessary for plant persistence; determined by field inspection and/or surveys; may or may not contain clay reed-mustard; habitat descriptions can be found in Federal Register Notice and species recovery plan links at <http://www.fws.gov/endangered/wildlife.html>.
- *Occupied habitat* is defined as areas currently or historically known to support clay reed-mustard; synonymous with "known habitat."

The following avoidance and minimization measures should be included in the Plan of Development:

1. Pre-project habitat assessments will be completed across 100% of the project disturbance area within potential habitat prior to any ground disturbing activities to determine if suitable Wright fishhook cactus habitat is present.

2. Within suitable habitat, site inventories will be conducted to determine occupancy. Where standard surveys are technically infeasible and otherwise hazardous due to topography, slope, etc., suitable habitat will be assessed and mapped for avoidance (hereafter, "avoidance areas"); in such cases, in general, 300' buffers will be maintained between surface disturbance and avoidance areas. However, site specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat. Inventories:
    a. Must be conducted by qualified individual(s) approved by BLM using accepted survey protocols,
        i. Will be conducted in suitable and occupied habitat for all areas proposed for surface disturbance prior to initiation of project activities and within the same growing season, at a time when the plant can be detected and during appropriate flowering periods. Inventories should be conducted between April 1st to June 15th, however, surveyors should verify that the plant is flowering by contacting a BLM or FWS botanist or demonstrating that the nearest known population is in flower,
    b. Will occur within 300' from the centerline of the proposed right-of-way for surface pipelines or roads; and within 300' from the perimeter of disturbance for the proposed well pad including the well pad,
    c. Will include, but not be limited to, plant species lists and habitat characteristics, and
    d. Will be valid until April 1st the following year.

3. Design project infrastructure to minimize impacts within suitable habitat:
    a. Where standard surveys are technically infeasible, infrastructure and activities will avoid all suitable habitat (avoidance areas) and incorporate 300' buffers, in general; however, site specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat,
    b. Reduce well pad size to the minimum needed, without compromising safety,
    c. Where technically and economically feasible, use directional drilling or multiple wells from the same pad,
    d. Limit new access routes created by the project,
    e. Roads and utilities should share common right-of-ways where possible,
    f. Reduce the width of right-of-ways and minimize the depth of excavation needed for the road bed; where feasible, use the natural ground surface for the road within habitat,
    g. Place signing to limit off-road travel in sensitive areas, and
    h. Stay on designated routes and other cleared/approved areas.
    i. All disturbed areas will be revegetated with native species comprised of species indigenous to the area and non-native species that are not likely to invade other areas.

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4. Within occupied habitat, project infrastructure will be designed to avoid direct disturbance and minimize indirect impacts to populations and to individual plants:
   a. Follow the above recommendations (#3) for project design within suitable habitats,
   b. To avoid water flow and/or sedimentation into occupied habitat and avoidance areas, silt fences, hay bales, and similar structures or practices will be incorporated into the project design; appropriate placement of fill is encouraged,
   d. Construction of roads will occur such that the edge of the right of way is at least 300' from any plant and 300' from avoidance areas,
   e. Roads will be graveled within occupied habitat; the operator is encouraged to apply water for dust abatement to such areas from April 1st to June 15th (flowering period); dust abatement applications will be comprised of water only,
   f. The edge of the well pad should be located at least 300' away from plants and avoidance areas, in general; however, site specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat,
   g. Surface pipelines will be laid such that a 300' buffer exists between the edge of the right of way and plants and 300' between the edge of right of way and avoidance areas; use stabilizing and anchoring techniques when the pipeline crosses suitable habitat to ensure pipelines don't move towards the population; site specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat,
   h. Construction activities will not occur from April 1st through June 15th within occupied habitat,
   i. Before and during construction, areas for avoidance should be visually identifiable in the field, e.g., flagging, temporary fencing, rebar, etc.,
   j. Place produced oil, water, or condensate tanks in centralized locations, away from occupied habitat, and
   k. Minimize the disturbed area of producing well locations through interim and final reclamation. Reclaim well pads following drilling to the smallest area possible.

5. Occupied Wright fishhook cactus habitats within 300' of the edge of the surface pipelines' right-of-ways, 300' of the edge of the roads' right-of-ways, and 300' from the edge of the well pad shall be monitored for a period of three years after ground disturbing activities. Monitoring will include annual plant surveys to determine plant and habitat impacts relative to project facilities. Annual reports shall be provided to the BLM and the Service. To ensure desired results are being achieved, minimization measures will be evaluated and may be changed after a thorough review of the monitoring results and annual reports during annual meetings between the BLM and the Service.

6. Reinitiation of section 7 consultation with the Service will be sought immediately if any loss of plants or occupied habitat for the Wright fishhook cactus is anticipated as a result of project activities.

Additional site-specific measures may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation.

Attachment K—Lease Notice for Winkler Pincushion Cactus

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Lease Notice – Winkler Pincushion Cactus (*Pediocactus winkleri*)

In order to minimize effects to the federally threatened Winkler pincushion cactus, the Bureau of Land Management (BLM), in coordination with the U.S. Fish and Wildlife Service (Service), has developed the following avoidance and minimization measures. Implementation of these measures will help ensure the activities carried out during oil and gas development (including but not limited to drilling, production, and maintenance operations) are in compliance with the Endangered Species Act (ESA). For the purposes of this document, the follow terms are so defined:

- *Potential habitat* is defined as areas that satisfy the broad criteria of the species habitat description; usually determined by preliminary, in-house assessment.
- *Suitable habitat* is defined as areas which contain or exhibit the specific components or constituents necessary for plant persistence; determined by field inspection and/or surveys; may or may not contain clay reed-mustard; habitat descriptions can be found in Federal Register Notice and species recovery plan links at <http://www.fws.gov/endangered/wildlife.html>.
- *Occupied habitat* is defined as areas currently or historically known to support clay reed-mustard; synonymous with "known habitat."

The following avoidance and minimization measures should be included in the Plan of Development:

1. Pre-project habitat assessments will be completed across 100% of the project disturbance area within potential habitat prior to any ground disturbing activities to determine if suitable Winkler pincushion cactus habitat is present.

2. Within suitable habitat, site inventories will be conducted to determine occupancy. Where standard surveys are technically infeasible and otherwise hazardous due to topography, slope, etc., suitable habitat will be assessed and mapped for avoidance (hereafter, "avoidance areas"); in such cases, in general, 300' buffers will be maintained between surface disturbance and avoidance areas. However, site specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat. Inventories:
   a. Must be conducted by qualified individual(s) approved by BLM using accepted survey protocols,
   b. Will be conducted in suitable and occupied[1] habitat for all areas proposed for surface disturbance prior to initiation of project activities and within the same growing season, at a time when the plant can be detected, and during appropriate flowering periods. Inventories should be conducted between March 15th to June 1st, however, surveyors should verify that the plant is flowering by contacting a BLM or FWS botanist or demonstrating that the nearest known population is in flower,
   c. Will occur within 300' from the centerline of the proposed right-of-way for surface pipelines or roads; and within 300' from the perimeter of disturbance for the proposed well pad including the well pad,
   d. Will include, but not be limited to, plant species lists and habitat characteristics, and
   e. Will be valid until March 15th the following year.

3. Design project infrastructure to minimize impacts within suitable habitat:
   a. Where standard surveys are technically infeasible, infrastructure and activities will avoid all suitable habitat (avoidance areas) and incorporate 300' buffers, in general; however, site specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat,
   b. Reduce well pad size to the minimum needed, without compromising safety,
   c. Where technically and economically feasible, use directional drilling or multiple wells from the same pad,
   d. Limit new access routes created by the project,
   e. Roads and utilities should share common right-of-ways where possible,
   f. Reduce the width of right-of-ways and minimize the depth of excavation needed for the road bed; where feasible, use the natural ground surface for the road within habitat,
   g. Place signing to limit off-road travel in sensitive areas, and
   h. Stay on designated routes and other cleared/approved areas.
   i. All disturbed areas will be revegetated with native species comprised of species indigenous to the

[1] Occupied habitat *is defined as areas currently or historically known to support Winkler pincushion cactus; synonymous with "known habitat."*

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area and non-native species that are not likely to invade other areas.

4. Within occupied habitat, project infrastructure will be designed to avoid direct disturbance and minimize indirect impacts to populations and to individual plants:
   a. Follow the above recommendations (#3) for project design within suitable habitats,
   b. To avoid water flow and/or sedimentation into occupied habitat and avoidance areas, silt fences, hay bales, and similar structures or practices will be incorporated into the project design; appropriate placement of fill is encouraged,
   d. Construction of roads will occur such that the edge of the right of way is at least 300' from any plant and 300' from avoidance areas,
   e. Roads will be graveled within occupied habitat; the operator is encouraged to apply water for dust abatement to such areas from March 15th to June 1st (flowering period); dust abatement applications will be comprised of water only,
   f. The edge of the well pad should be located at least 300' away from plants and avoidance areas, in general; however, site specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat,
   g. Surface pipelines will be laid such that a 300' buffer exists between the edge of the right of way and plants and 300' between the edge of right of way and avoidance areas; use stabilizing and anchoring techniques when the pipeline crosses suitable habitat to ensure pipelines don't move towards the population; site specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat,
   h. Construction activities will not occur from March 15th through June 1st within occupied habitat,
   i. Before and during construction, areas for avoidance should be visually identifiable in the field, e.g., flagging, temporary fencing, rebar, etc.,
   j. Place produced oil, water, or condensate tanks in centralized locations, away from occupied habitat, and
   k. Minimize the disturbed area of producing well locations through interim and final reclamation. Reclaim well pads following drilling to the smallest area possible.

5. Occupied Winkler pincushion cactus habitats within 300' of the edge of the surface pipelines' right-of-ways, 300' of the edge of the roads' right-of-ways, and 300' from the edge of the well pad shall be monitored for a period of three years after ground disturbing activities. Monitoring will include annual plant surveys to determine plant and habitat impacts relative to project facilities. Annual reports shall be provided to the BLM and the Service. To ensure desired results are being achieved, minimization measures will be evaluated and may be changed after a thorough review of the monitoring results and annual reports during annual meetings between the BLM and the Service.

6. Reinitiation of section 7 consultation with the Service will be sought immediately if any loss of plants or occupied habitat for the Winkler pincushion cactus is anticipated as a result of project activities.

Additional site-specific measures may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with the U.S. Fish and Wildlife Service to ensure continued compliance with the ESA.

Attachment L—Lease Notice for the San Rafael Cactus

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Lease Notice – San Rafael Cactus (*Pediocactus despainii*)

In order to minimize effects to the federally endangered San Rafael cactus, the Bureau of Land Management (BLM) in coordination with the U.S. Fish and Wildlife Service (Service), have developed the following avoidance and minimization measures. Integration of and adherence to these measures will help ensure the activities carried out during oil and gas development (including but not limited to drilling, production, and maintenance) are in compliance with the Endangered Species Act (ESA). The following avoidance and minimization measures should be included in the Plan of Development:

1. Pre-project habitat assessments will be completed across 100% of the project disturbance area within potential habitat[2] prior to any ground disturbing activities to determine if suitable San Rafael cactus habitat is present.

2. Within suitable habitat[3], site inventories will be conducted to determine occupancy. Inventories:
    a. Must be conducted by qualified individual(s) approved by BLM using accepted survey protocols,
        i. Will be conducted in suitable and occupied[4] habitat for all areas proposed for surface disturbance prior to initiation of project activities and within the same growing season, at a time when the plant can be detected, and during appropriate flowering periods. Inventories should be conducted between March 15th to June 1st, unless extended by the BLM
    b. Will occur within 300' from the centerline of the proposed right-of-way for surface pipelines or roads; and within 100' from the perimeter of disturbance for the proposed well pad including the well pad,
    c. Will include, but not be limited to, plant species lists and habitat characteristics, and
    d. Will be valid until March 15th the following year.

3. Design project infrastructure to minimize impacts within suitable habitat[2]:
    a. Reduce well pad size to the minimum needed, without compromising safety,
    b. Where technically and economically feasible, use directional drilling or multiple wells from the same pad,
    c. Limit new access routes created by the project,
    d. Roads and utilities should share common right-of-ways where possible,
    e. Reduce width of right-of-ways and minimize the depth of excavation needed for the road bed; where feasible, use the natural ground surface for the road within habitat,
    f. Place signing to limit off-road travel in sensitive areas,
    g. Stay on designated routes and other cleared/approved areas, and
    h. All disturbed areas will be re-vegetated with native species comprised of species indigenous to the area and non-native species that are not likely to invade other areas.

4. Within occupied habitat[3], project infrastructure will be designed to avoid direct disturbance and minimize indirect impacts to populations and to individual plants:
    a. Follow the above (#3) recommendations for project design within suitable habitats,
    b. Buffers of 100 feet minimum between the edge of the right of way (roads and surface pipelines) or surface disturbance (well pads) and plants and populations will be incorporated,
    c. Surface pipelines will be laid such that a 100 foot buffer exists between the edge of the right of way and the plants, use stabilizing and anchoring techniques when the pipeline crosses the habitat to ensure the pipelines don't move towards the population,
    d. Before and during construction, areas for avoidance should be visually identifiable in the field,

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2 Potential habitat *is defined as areas which satisfy the broad criteria of the species habitat description; usually determined by preliminary, in-house assessment.*

3 Suitable habitat *is defined as areas which contain or exhibit the specific components or constituents necessary for plant persistence; determined by field inspection and/or surveys; may or may not contain San Rafael cactus. Habitat descriptions can be found on the U.S. Fish and Wildlife Service's web site (http://www.fws.gov/endangered/wildlife.html) or the Utah Division of Wildlife Resources website (http://wildlife.utah.gov/index.php).*

4 Occupied habitat *is defined as areas currently or historically known to support San Rafael cactus; synonymous with "known habitat."*

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e.g., flagging, temporary fencing, rebar, etc.,

e. Where technically and economically feasible, use directional drilling or multiple wells from the same pad,

f. Designs will avoid concentrating water flows or sediments into occupied habitat,

g. Place produced oil, water, or condensate tanks in centralized locations, away from occupied habitat, and

h. Minimize the disturbed area of producing well locations through interim and final reclamation. Reclaim well pads following drilling to the smallest area possible.

5. Occupied San Rafael cactus habitats within 100' of the edge of the surface pipelines' right-of-ways, 100' of the edge of the roads' right-of-ways, and 100' from the edge of the well pad shall be monitored for a period of three years after ground disturbing activities. Monitoring will include annual plant surveys to determine plant and habitat impacts relative to project facilities. Annual reports shall be provided to the BLM and the Service. To ensure desired results are being achieved, minimization measures will be evaluated and may be changed after a thorough review of the monitoring results and annual reports during annual meetings between the BLM and the Service.

6. Reinitiation of section 7 consultation with the Service will be sought immediately if any loss of plants or occupied habitat for the San Rafael cactus is anticipated as a result of project activities.

Additional site-specific measures may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with the U.S. Fish and Wildlife Service to ensure continued compliance with the ESA.

Attachment M—Lease Notice for the Ute Ladies' Tresses

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Lease Notice – Ute Ladies' Tresses (*Spiranthes diluvialis*)

In order to minimize effects to the federally threatened Ute ladies'-tresses, the Bureau of Land Management (BLM) in coordination with the U.S. Fish and Wildlife Service (Service), developed the following avoidance and minimization measures. Integration of and adherence to these measures will help ensure the activities carried out during oil and gas development (including but not limited to drilling, production, and maintenance) are in compliance with the Endangered Species Act (ESA). Ute ladies'-tresses habitat is provided some protection under Executive Orders 11990 (wetland protection) and 11988 (floodplain management), as well as section 404 of the Clean Water Act. Although plants, habitat, or populations may be afforded some protection under these regulatory mechanisms, the following conservation measures should be included in the Plan of Development:

1. Pre-project habitat assessments will be completed across 100% of the project disturbance area, including areas where hydrology might be affected by project activities, within potential habitat[5] prior to any ground disturbing activities to determine if suitable Ute ladies'-tresses habitat is present.

2. Within suitable habitat[6], site inventories will be conducted to determine occupancy. Inventories:
    a. Must be conducted by qualified individual(s) and according to BLM and Service accepted survey protocols,
    b. Will be conducted in suitable and occupied[7] habitat for all areas proposed for surface disturbance or areas that could experience direct or indirect changes in hydrology from project activities,
    c. Will be conducted prior to initiation of project activities and within the same growing season, at a time when the plant can be detected, and during appropriate flowering periods (usually August 1st and August 31st in the Uintah Basin; however, surveyors should verify that the plant is flowering by contacting a BLM or FWS botanist or demonstrating that the nearest known population is in flower),
    d. Will occur within 300' from the centerline of the proposed right-of-way for surface pipelines or roads; and within 300' from the perimeter of disturbance for the proposed well pad including the well pad,
    e. Will include, but not be limited to, plant species lists, habitat characteristics, source of hydrology, and estimated hydroperiod, and
    f. Will be valid until August 1st the following year.

3. Design project infrastructure to minimize direct or indirect impacts to suitable habitat[2] both within and downstream of the project area:
    a. Alteration and disturbance of hydrology will not be permitted,
    b. Reduce well pad size to the minimum needed, without compromising safety,
    c. Limit new access routes created by the project,
    d. Roads and utilities should share common right-of-ways where possible,
    e. Reduce width of right-of-ways and minimize the depth of excavation needed for the road bed,
    f. Construction and right-of-way management measures should avoid soil compaction that would impact Ute ladies' tresses habitat,
    g. Off-site impacts or indirect impacts should be avoided or minimized (i.e. install berms or catchment ditches to prevent spilled materials from reaching occupied or suitable habitat through either surface or groundwater),
    h. Place signing to limit off-road travel in sensitive areas,

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5 Potential habitat *is defined as areas which satisfy the broad criteria of the species habitat description; usually determined by preliminary, in-house assessment.*

6 Suitable habitat *is defined as areas which contain or exhibit the specific components or constituents necessary for plant persistence; determined by field inspection and/or surveys; may or may not contain Ute ladies'-tresses. Habitat descriptions can be found in Recovery Plans and Federal Register Notices for the species at <http://www.fws.gov/endangered/wildlife.html>.*

7 Occupied habitat *is defined as areas currently or historically known to support Ute ladies'-tresses; synonymous with "known habitat."*

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i. Stay on designated routes and other cleared/approved areas, and
j. All disturbed areas will be re-vegetated with species approved by FWS and BLM botanists.

4. Within occupied habitat[3], project infrastructure will be designed to avoid direct disturbance and minimize indirect impacts to populations and to individual plants:
   a. Follow the above (#3) recommendations for project design within suitable habitats,
   b. Buffers of 300 feet minimum between right of way (roads and surface pipelines) or surface disturbance (well pads) and plants and populations will be incorporated,
   c. Surface pipelines will be laid such that a 300-foot buffer exists between the edge of the right of way and the plants, using stabilizing and anchoring techniques when the pipeline crosses habitat to ensure the pipelines don't move towards the population,
   d. Before and during construction, areas for avoidance should be visually identifiable in the field, e.g., flagging, temporary fencing, rebar, etc.,
   e. Where technically and economically feasible, use directional drilling or multiple wells from the same pad,
   f. Designs will avoid altering site hydrology and concentrating water flows or sediments into occupied habitat,
   g. Place produced oil, water, or condensate tanks in centralized locations, away from occupied habitat, with berms and catchment ditches to avoid or minimize the potential for materials to reach occupied or suitable habitat, and
   h. Minimize the disturbed area of producing well locations through interim and final reclamation. Reclaim well pads following drilling to the smallest area possible.

5. Occupied Ute ladies'-tresses habitats within 300' of the edge of the surface pipelines' right-of-ways, 300' of the edge of the roads' right-of-ways, and 300' from the edge of the well pad shall be monitored for a period of three years after ground disturbing activities. Monitoring will include annual plant surveys to determine plant and habitat impacts relative to project facilities. Habitat impacts include monitoring any changes in hydrology due to project related activities. Annual reports shall be provided to the BLM and the Service. To ensure desired results are being achieved, minimization measures will be evaluated and may be changed after a thorough review of the monitoring results and annual reports during annual meetings between the BLM and the Service.

6. Reinitiation of section 7 consultation with the Service will be sought immediately if any loss of plants or occupied habitat for the Ute ladies'-tresses is anticipated as a result of project activities.

Additional site-specific measures may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with the U.S. Fish and Wildlife Service to ensure continued compliance with the ESA.

Attachment N—Lease Notice for the Maguire Daisy

Utah's Threatened and Endangered Species Notices

Lease Notice – Maguire Daisy (*Erigeron maguirei*)

In order to minimize effects to the federally threatened Maguire Daisy, the Bureau of Land Management (BLM), in coordination with the U.S. Fish and Wildlife Service (Service), has developed the following avoidance and minimization measures. Implementation of these measures will help ensure the activities carried out during oil and gas development (including but not limited to drilling, production, and maintenance operations) are in compliance with the Endangered Species Act (ESA). For the purposes of this document, the follow terms are so defined:

- *Potential habitat* is defined as areas which satisfy the broad criteria of the species habitat description; usually determined by preliminary, in-house assessment.
- *Suitable habitat* is defined as areas which contain or exhibit the specific components or constituents necessary for plant persistence; determined by field inspection and/or surveys; may or may not contain clay reed-mustard; habitat descriptions can be found in Federal Register Notice and species recovery plan links at <http://www.fws.gov/endangered/wildlife.html>.
- *Occupied habitat* is defined as areas currently or historically known to support clay reed-mustard; synonymous with "known habitat."

The following avoidance and minimization measures should be included in the Plan of Development:

1. Pre-project habitat assessments will be completed across 100% of the project disturbance area within potential habitat[1] prior to any ground disturbing activities to determine if suitable Maguire Daisy habitat is present.

2. Site inventories will be conducted within suitable habitat to determine occupancy. Where standard surveys are technically infeasible and otherwise hazardous due to topography, slope, etc., suitable habitat will be assessed and mapped for avoidance (hereafter, "avoidance areas"); in such cases, in general, 300' buffers will be maintained between surface disturbance and avoidance areas. However, site specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat. Where conditions allow, inventories:
    a. Must be conducted by qualified individual(s) and according to BLM and Service accepted survey protocols,
    b. Will be conducted in suitable and occupied[3] habitat for all areas proposed for surface disturbance prior to initiation of project activities and within the same growing season, at a time when the plant can be detected (usually May 1st to June 30th, however, surveyors should verify that the plant is flowering by contacting a BLM or FWS botanist or demonstrating that the nearest known population is in flower),
    c. Will occur within 300' from the centerline of the proposed right-of-way for surface pipelines or roads; and within 300' from the perimeter of disturbance for the proposed well pad including the well pad,
    d. Will include, but not be limited to, plant species lists and habitat characteristics, and
    e. Will be valid until May 1st the following year.

3. Design project infrastructure to minimize impacts within suitable habitat:
    a. Where standard surveys are technically infeasible, infrastructure and activities will avoid all suitable habitat (avoidance areas) and incorporate 300' buffers, in general; however, site specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat,
    b. Reduce well pad size to the minimum needed, without compromising safety,
    c. Where technically and economically feasible, use directional drilling or multiple wells from the same pad,
    d. Limit new access routes created by the project,
    e. Roads and utilities should share common right-of-ways where possible,
    f. Reduce the width of right-of-ways and minimize the depth of excavation needed for the road bed; where feasible, use the natural ground surface for the road within habitat,
    g. Place signing to limit off-road travel in sensitive areas, and
    h. Stay on designated routes and other cleared/approved areas.
    i. All disturbed areas will be revegetated with native species comprised of species indigenous to the area and non-native species that are not likely to invade other areas.

Utah's Threatened and Endangered Species Notices

4. Within occupied habitat, project infrastructure will be designed to avoid direct disturbance and minimize indirect impacts to populations and to individual plants:
    a. Follow the above recommendations (#3) for project design within suitable habitats,
    b. To avoid water flow and/or sedimentation into occupied habitat and avoidance areas, silt fences, hay bales, and similar structures or practices will be incorporated into the project design; appropriate placement of fill is encouraged,
    d. Construction of roads will occur such that the edge of the right of way is at least 300' from any plant and 300' from avoidance areas,
    e. Roads will be graveled within occupied habitat; the operator is encouraged to apply water for dust abatement to such areas from May 1st to June 30th (flowering period); dust abatement applications will be comprised of water only,
    f. The edge of the well pad should be located at least 300' away from plants and avoidance areas, in general; however, site specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat,
    g. Surface pipelines will be laid such that a 300' buffer exists between the edge of the right of way and plants and 300' between the edge of right of way and avoidance areas; use stabilizing and anchoring techniques when the pipeline crosses suitable habitat to ensure pipelines don't move towards the population; site specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat,
    h. Construction activities will not occur from May 1st through June 30th within occupied habitat,
    i. Before and during construction, areas for avoidance should be visually identifiable in the field, e.g., flagging, temporary fencing, rebar, etc.,
    j. Place produced oil, water, or condensate tanks in centralized locations, away from occupied habitat, and
    k. Minimize the disturbed area of producing well locations through interim and final reclamation. Reclaim well pads following drilling to the smallest area possible.

5. Occupied Maguire Daisy habitats within 300' of the edge of the surface pipelines' right of ways, 300' of the edge of the roads' right of ways, and 300' from the edge of the well pad shall be monitored for a period of three years after ground disturbing activities. Monitoring will include annual plant surveys to determine plant and habitat impacts relative to project facilities. Annual reports shall be provided to the BLM and the Service. To ensure desired results are being achieved, minimization measures will be evaluated and may be changed after a thorough review of the monitoring results and annual reports during annual meetings between the BLM and the Service.

6. Reinitiation of section 7 consultation with the Service will be sought immediately if any loss of plants or occupied habitat for the Maguire Daisy is anticipated as a result of project activities. Additional site-specific measures may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with the U.S. Fish and Wildlife Service to ensure continued compliance with the ESA.

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APPENDIX 12—REASONABLY FORESEEABLE DEVELOPMENT SCENARIO FOR OIL AND GAS AND GEOTHERMAL RESOURCES

OIL AND GAS

Summary

Recent exploration and drilling results in the western portion of the Richfield planning area have precipitated much interest in leasing and exploration. During the past 15 years, the area has received little attention as a potential oil and gas area. On the basis of geology, leasing activity, proposed drilling, and a comparison with the history of development in the Northern Utah–Wyoming Overthrust Belt in the 1970s, Bureau of Land Management (BLM) has projected that 360 wells will be drilled in this area during the next 15 years. The ownership pattern in this belt is a mixture of BLM lands, State of Utah lands, and privately owned lands. Each well pad will disturb about 4 acres and will require about 2 miles of new roads. Early development activity indicates that multiple wells will be drilled from many pads, with the overall effect of reducing total impacts.

The southern half of the planning area will likely receive much less attention, and only 45 wells are projected for that area (again, with 4 acre pads and 2 miles of road per well pad). The remainder of the planning area is the Wasatch Plateau, which is largely national forest. Forty-nine wells are expected in this area, many of which will be coalbed natural gas (CBNG) tests. Each pad will disturb about 2 acres and require about 5 miles of road per well.

The other major source of surface disturbance will be geophysical exploration. Most of this exploration is projected to occur in the western part of the planning area and will disturb approximately 4,500 acres, much of which will likely be on privately owned lands. In the Wasatch Plateau area, helicopters will be used in some areas, and disturbance is expected on about 360 acres. Fewer geophysical surveys are anticipated for the remainder of the planning area, and it is estimated that about 240 acres will be disturbed.

It is assumed that any future pipelines, power lines, etc., would follow roads where possible and that continuing reclamation of surface disturbance would reduce net impacts. Future field discoveries, if any, will result in the construction of production facilities and some additional impacts beyond the well pads.

Total surface impacts are estimated to be about 8,180 acres (5,100 acres from geophysical exploration and 3,080 acres from drilling).

Introduction

The following Reasonably Foreseeable Development (RFD) scenario projects the level of oil and gas activity that can reasonably be expected during the next 15 years in the planning area. All lands (federal, State of Utah, and private) are included in the projection, following the guidance in BLM Handbook H-1624-1, *Planning for Fluid Mineral Resources* and Instruction Memorandum No. 2004-089, *Policy for Reasonably Foreseeable Development (RFD) Scenario for Oil and Gas*. It is assumed that all potentially productive areas are open under standard lease terms and conditions, except those areas designated as closed to leasing by law, regulation, or executive order.

Worldwide demand for oil and gas continues to grow and all indications are that growth will continue. Against this background, geology, past and present activity, economics, and other factors will determine the level of activity in the planning area.

Description of Geology

Geology is the ultimate controlling factor determining future hydrocarbon exploration and development. This discussion will consider the geological differences within the planning area as they relate to oil and gas potential. The basic units considered will be the individual oil and gas "play" (Gautier et al. 1996) and "assessment unit" (Schenk et al. 2003) as these terms are used by the United States Geological Survey (USGS) in its national assessments of oil and gas resources. The Mineral Potential Report for the Richfield Resource Management Plan (RMP) (Booz Allen Hamilton 2004) discusses the geology of the planning area and gives descriptions of most of the plays that are shown in Figure A12-1 of this report.

The geologically oldest play in the planning area is the Late Proterozoic and Cambrian Play (USGS-2403), which was described in the Northern Arizona Province but includes a large portion of southern and central Utah, including the southern part of the planning area. The play is based on the recognition of carbonaceous shale in the Upper Proterozoic Chuar Group in the Grand Canyon and the projection of these units in the subsurface of northern Arizona and southern and central Utah (Rauzi 1990). Given this potential source rock, a potential exists for hydrocarbons in uppermost Proterozoic and lower Cambrian reservoirs. The play received a great deal of attention in the 1990s, and several test wells were drilled in southern Utah. Some of the wells encountered carbon dioxide gas, but no hydrocarbons were reported and interest in the play waned.

Four classic Paradox Basin plays underlie the extreme eastern corner of the planning area, the area generally east of Range 12 East in easternmost Wayne and Garfield counties. The plays are identified as Buried Fault Blocks (USGS-2101), Porous Carbonate Buildup (USGS-2102), Fractured Interbed (USGS-2103), and Salt Anticline Flank (USGS-2105) (Huffman 1996). Play 2101 is exemplified by the prolific Lisbon Field in northern San Juan County, where oil and gas are produced from Devonian and Mississippian age carbonate rocks and sandstones in a faulted anticline (Smouse 1993). Play 2102 is primarily an oil play, characterized by hydrocarbon accumulations in porous algal mounds and related rocks in the Paradox Formation of the Hermosa Group (Pennsylvanian age). Traps are largely stratigraphic in nature, involving porosity and permeability differences in carbonate and evaporitic rocks and organic-rich dolomitic shales. Structures of Pennsylvanian age may have influenced the locations of the algal buildups. The Giant Aneth Field in San Juan County is the largest field in this play, but many other smaller isolated buildups have produced (Huffman 1996).

Play 2103 is a continuous oil and gas play with organic rich dolomitic shales serving as both source and reservoir rocks. Fracturing of the otherwise tight rocks is necessary if the play is to be productive. Dolomitic shales are interbedded with salt in a cyclical sequence, where the salt provides a seal for the fractured reservoirs (Huffman 1996). This play is productive in southwestern Grand County, where current development involves horizontal wells designed to intersect vertical fractures in areas where structures have enhanced fracturing. Play 2105 involves Pennsylvanian and Permian age carbonate and sandstone reservoirs along the flanks of northwest-trending salt anticlines. Production to date has been gas—mostly from Andy's Mesa Field in Colorado—but the play is lightly explored (Huffman 1996).

The Permo-Triassic Unconformity Play (USGS-2106) was included in the 1995 USGS Assessment of greater Paradox Basin resources even though it is outside the Paradox Basin proper. The Permo-Triassic Unconformity Play includes a large part of the planning area. Known occurrences and shows are in upper Permian and lower Triassic carbonate and sandstone formations. Upper Valley Oil Field south of the planning area produces from this play, and oil and gas shows have been reported over a large area in

southern and central Utah. The trapping mechanism at Upper Valley is anticlinal, but the oil is offset from the crest by a strong hydrodynamic drive. Huffman (1996) described the play as lightly explored and emphasized unanswered questions about source rock and timing.

Two hypothetical Eastern Great Basin Province plays, the Late Paleozoic Play (USGS-1902) and the Sevier Frontal Zone Play (USGS-1907), include western Sevier and Sanpete counties. Both of these plays were nonproductive and hypothetical when first described (Peterson and Grow 1996), but recent drilling has since confirmed the Sevier Frontal Zone Play. Play 1902 is based on the possibility of early-formed traps in middle and upper Paleozoic carbonates and sandstones. Potential source rocks include organic-rich marine shales in Mississippian, Pennsylvanian, and Permian age formations, which may have favorable maturity levels in some areas of the play. A variety of structural and stratigraphic traps may be present, but the play remains hypothetical at this time.

Play 1907 was also hypothetical and was based in large part on similarities in lithology and structural style between this area and productive segments of the Overthrust Belt in northeastern Utah and southwestern Wyoming. Potential traps exist in structures formed along and near the leading edge of Sevier thrust plates, and favorable reservoir rock is present in several formations. Recent drilling has confirmed the presence of oil at one location along this zone, and additional exploration is in progress.

The Cretaceous Sandstone Play (USGS-2107) was also included in the Paradox Basin Assessment (Huffman 1996) although it is outside the geologic boundaries of the basin. This play specifically relates to gas occurrences in sandstone reservoirs in the Wasatch Plateau. Currently, there is interest, not so much in the sandstone reservoirs, but in coalbeds within the sandstones (e.g., for CBNG). The most productive coals have been in the Ferron Sandstone Member of the Mancos Shale in Carbon and Emery counties. Similar coals in the Emery Sandstone in the Wasatch Plateau are prospective targets. Both of these units extend into the planning area in the Wasatch Plateau area. The CBNG resource was evaluated in more detail in the 2003 USGS Assessment, although the area of interest coincides with that of Play 2107.

The USGS completed a new assessment of oil and gas resources in the Uinta-Piceance Province in 2003 and included the Wasatch Plateau and the Ferron Trend in the analysis. Parts of both of these regions extend into the planning area. The Uinta Basin Blackhawk Formation Coalbed Gas Assessment Unit (USGS-AU 50200281) evaluates CBNG resources in the Blackhawk and Emery Sandstone coals in the Book Cliffs and Wasatch Plateau. CBNG production from Blackhawk coals has been established in the Castlegate Field in northern Carbon County, but production has been hampered by problems with dewatering the coal. Coalbeds are also in the Emery Sandstone in the Wasatch Plateau in Carbon, Sanpete, and Sevier counties, which may have favorable maturity levels in some areas (Johnson and Roberts 2003).

Five assessment units (USGS-AU 50200161, AU 50200183, AU 50200184, AU 50200185, and AU 50200101) of the Ferron/Wasatch Plateau Total Petroleum System are partially or wholly in the northeastern part of the planning area. More than 30 wells have been drilled in these assessment units, with only one listed as productive; however, no volumes are listed (Henry and Finn 2003, p. 26). All of these wells were based on the known occurrence of coalbeds in the Ferron Sandstone Member of the Mancos Shale. All of these gas assessments units are included within the area covered by the Cretaceous Sandstone Play (USGS-2107).

Past and Present Oil and Gas Activity

Geophysical Exploration

Richfield Field Office (RFO) records indicate that approximately 90 authorizations for geophysical surveys were issued from 1972 to the present in the western parts of the planning area (the old Sevier River Resource Area). Sixty-five of these were issued between 1976 and 1982, with only four issued after 1988. The surveys resulting from the permits were spread over most of the western part of the planning area.

Fewer surveys, of unknown dates, have been conducted in the eastern part of the planning area (eastern Wayne and Garfield counties) with a concentration in and around T. 30 S., R. 12 E. on the line separating the two counties. Several nonproductive wells have been drilled in this same area.

Since 2004, interest has increased in acquiring geophysical data in the vicinity of Sevier Valley related to the recent discovery of oil. One large project (115 miles) was completed in 2004, and additional proposals by multiple companies are anticipated.

Federal Oil and Gas Leasing

Significant portions of Sanpete and Sevier counties are currently under federal lease (See Table 2 of the Mineral Potential Report for the Richfield RMP [Booz Allen Hamilton 2004]). Leases are clustered in the western and eastern parts of the two counties, with most of the eastern leases located in the Manti-La Sal National Forest and related to the Sevier Frontal Play and the Cretaceous Sandstone and CBNG plays, respectively. Few leases are in the Fishlake National Forest, including the southern part of the Wasatch Plateau. Another block of leases covers the eastern part of the planning area in eastern Wayne and Garfield counties. This latter group has combined hydrocarbon lease conversions in the Tar Sand Triangle Special Tar Sand Area (STSA).

The largest federal lease sale involving lands in the planning area occurred in June 2004. In this sale (the June 25, 2004, BLM Competitive Oil and Gas Lease Sale) 81 parcels, encompassing 146,365 acres in the planning area, were offered for lease. Several of the tracts in the western part of the area received bonus bids of more than $100 per acre, with a maximum bid of $360 per acre indicating strong industry interest in this area. The lease tracts extend northward from southwestern Sevier County through western Sanpete County. This area of interest coincides with the Sevier Frontal Zone Play (USGS-1907) described above. Another block of pending leases in northeastern Wayne County resulted from the November 2003 and June 2004 lease sale, but these were obtained for the minimum bonus bid ($2.00 per acre) or noncompetitively the day after the sale.

Oil and Gas Units

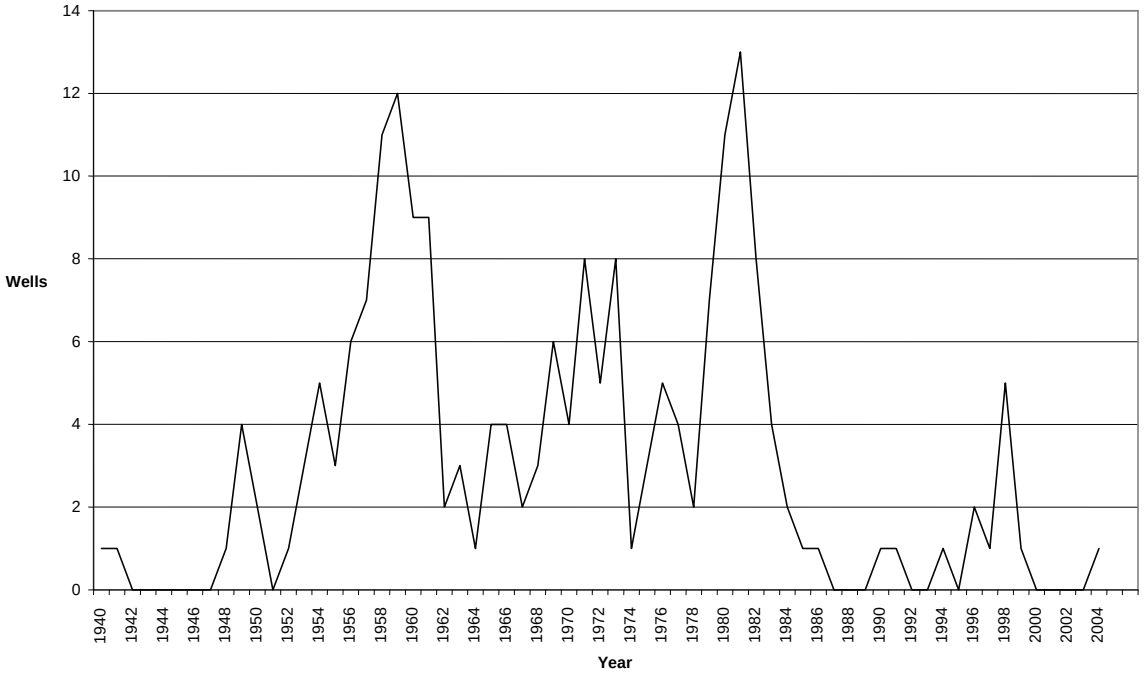
Wolverine Gas and Oil established the Wolverine Unit in June 2003. The Unit Area includes 65,980 acres of federal, state, and private lands in Sevier and Sanpete counties. The first unit obligation well was completed in 2004, and additional wells are currently permitted. No other exploration units were in the planning area as of February 2005.

Historical Drilling and Production

Altogether, approximately 220 exploration wells have been drilled in the planning area (IHS Energy Well Data 2004). Thirteen of these were drilled during 1990 to 2004, yielding an average of 0.9 new wells per year. Drilling activity peaked in the late 1950s (12 wells per year) and again in the early 1980s (13 wells

per year). From 1940 to 2004, the average number of wells drilled each year was slightly over three (see Figure A12-1).

Figure A12-1. Wells Drilled/Year (1940-2004)



Utah Division of Oil, Gas, and Mining production data (February 2004) lists only 405 barrels of oil and 3,027,708 thousand cubic feet (mcf) of gas for Sanpete County, with 3,027,183 mcf being from the abandoned Joe's Valley Field. The source of the remaining 525 mcf of gas and 405 barrels of oil is not given. No other historical production is listed for the planning area, and Joe's Valley is the only identified field.

Oil production in the Covenant Field, associated with the Wolverine Unit, began in 2004. Production quantities are not available at this time.

Infrastructure

The Kern River gas pipeline parallels the western boundary of the planning area at a distance of 2 to 5 miles. This pipeline was built in 1991 and expanded in 2003 to transport natural gas from southwestern Wyoming and Utah to markets in southern Nevada and California. A Questar pipeline follows Highway 89 through the planning area. No oil pipelines are within this part of the State, and if oil is produced, it would probably be trucked to Salt Lake City as has been done for 40 years with oil produced in the Upper Valley Field.

Oil and Gas Occurrence Potential

The Mineral Potential Report for the Richfield RMP (Booz Allen Hamilton 2004) describes oil and gas occurrence potential and includes maps depicting occurrence potential ratings.

Potential for Oil and Gas Activity

In the following discussion, the term "oil and gas activity" will be used instead of "development" to avoid possible confusion between "exploration" and "development" in the strict sense. Only one known field in the planning area exists at this time, and many of the future wells will be exploratory in nature. The purpose of the RFD is to arrive at a reasonable estimate of surface impacts resulting from all future oil and gas activity, whether this results from exploration or from development activity. Future activity levels will be determined largely by the outcome of continuing testing of the Sevier Frontal Zone Play (USGS-1907) and the gas resources in the Wasatch/Ferron and Mesaverde Blackhawk assessment units, essentially the area covered by the Play. Energy demand will likely only increase in the future, and if additional economically recoverable resources can be identified in the Sevier Frontal Zone Play and the area covered by Play 2107, significant activity may occur. Other plays would seem to be less promising but will probably continue to be tested periodically. Activity levels will be projected by play, or overlapping groups of plays, and then related to geographic subdivisions in the planning area.

The northwestern corner of the Paradox Basin underlies the extreme eastern portion of Garfield and Wayne counties and includes four partially overlapping plays: 2101 (Buried Fault Blocks), 2102 (Porous Carbonate Buildup), 2103 (Fractured Interbed), and 2105 (Salt Anticline Flank). These plays have been tested by several wells, and it is unlikely that significant drilling will occur there in the next 15 years (although a few tests can be expected). Huffman (1996) gave the following assessment of Plays 2101, 2102, 2103, and 2105 for the Paradox Basin as a whole: Play 2101—low to moderate future potential for small to medium-sized fields with minimal oil columns; Play 2102—small fields in the 1 to 3 million barrels of oil range; Play 2103—greatest potential in the Cane Creek, Chimney Rock, Gothic, and Hovenweep Shales due to organic content and thickness; and Play 2105—low potential for oil, fair to good for gas. Several horizontal wells have produced from Play 2103 in the Kane Springs Unit Area in Grand County southeast of the planning area, but the wells are expensive and production rates declined fairly rapidly.

Plays 2106 (Permo-Triassic Unconformity) and 2403 (Upper Proterozoic Cambrian) underlie large areas in the southern and central parts of the planning area. The northern and western parts of these plays have encountered carbon dioxide gas, and the Paleozoic age rocks of this entire region appear to have been flushed by carbon dioxide generated by igneous activity to the north (Utah Geological Survey 2004). Hydrocarbons may still be present in these reservoirs in the eastern and southern parts of the planning area. In the Upper Valley Oil Field (USGS-2106), near Escalante, a strong hydrodynamic drive has offset the oil onto the flank of an anticlinal structure, and other anticlinal flanks will probably be tested. Huffman (1996) described Play 2106 as lightly explored and projected a low probability of any significant exploration effort until source rock and timing questions were answered.

Two hypothetical Eastern Great Basin plays (USGS-1902 and USGS-1907) cover western Sevier and Sanpete counties. Play 1907 is characterized by structures along the leading edge of Sevier age faults analogous to those productive in the Wyoming Thrust Belt to the north (Peterson and Grow 1996). Several test wells were drilled in this play in the 1970s, but it had received little attention in recent years until Wolverine Gas and Oil established the Wolverine Unit in 2003. Wolverine Gas and Oil has now completed two wells, with oil production reported from the Navajo Sandstone (The Rocky Mountain Oil Journal, vol. 84, no. 27, July 2004; Moulton and Pinnell 2005), and is drilling additional wells while acquiring additional two-dimensional seismic data. Parcels within and near this play received large bonus bids at the June 2004 BLM lease sale, indicating renewed industry interest. Exploration wells will probably be located at different locations along the north-trending play, and if exploration is successful, this will be followed by development wells. Multiple wells are projected from many drill pads, which will minimize surface disturbance.

Much of the land in this play is privately owned, but a block of BLM land in and around Ts. 17 and 18 S., R. 1E. is unleased and would attract a great deal of industry interest if offered for competitive bidding. Other larger blocks of BLM lands are under lease, and the lands mentioned above appear to be the only BLM lands where a lack of leases would be an impediment to exploration and development.

Continuing evaluation of coals and their including sandstones for gas resources can be expected in eastern Sanpete and Sevier counties. The Uinta Basin Blackhawk Coalbed Gas Assessment Unit (AU 50200281) covers parts of three field offices, with approximately 45 percent of the assessment unit located in the planning area. The USGS's estimated mean value for total technically recoverable CBNG in the unit is 499 billion cubic feet (BCF) in the Blackhawk and Emery coals. If it is assumed that the resource is more or less evenly distributed throughout the assessment unit, however questionable this assumption might be, the planning area could contain 225 BCF of this CBNG. Tabet and Quick (2003, p. 10) estimated that the Emery coals under the Wasatch Plateau might contain an in-place gas resource of 0.8 to 3.2 trillion cubic feet (TCF). It appears that roughly 60 percent of the area included in these authors' estimate (or 0.5 to 1.9 TCF of CBNG) lies in the planning area. How much recoverable gas is present remains to be determined, but certainly interest will continue in the CBNG resource in this part of the planning area. These potential resources are in the Wasatch Plateau portion of the planning area, within the Manti-LaSal and Fishlake National Forests. Existing leases already cover significant portions of the Manti-La Sal National Forest in eastern Sanpete County. However, leasing is not allowed under the current Fishlake National Forest Plan unless an environmental analysis is completed for specific leasing proposals. Until a new forest plan is developed, the absence of leasing is an impediment to exploration and development in this national forest.

Several assessment units of the Ferron/Wasatch Plateau Total Petroleum System are partially or completely in the planning area in eastern Sanpete and Sevier counties. These units include Deep Coal and Sandstone Gas (AU 50200161), Southern Coal Fairway (AU 50200183), Joe's Valley and Musinia Grabens (AU 50200184), and Southern Coal Outcrop (AU 50200185). The "EPCA" Inventory, prepared under a provision of the 2000 Energy Policy and Conservation Act (U.S. Departments of the Interior, Agriculture, and Energy 2003, pp. 2–14), assigns undiscovered technically recoverable resources of 223 BCF of gas to these assessment units.[1] Prorating these numbers according to area shows 173 BCF of gas in the planning area. Again, most of this resource lies under the Manti-LaSal and Fishlake National Forests, but a narrow strip of BLM land in extreme eastern Sevier County could contain some gas.

The gas content of the Ferron coals appears to decrease southward from the Drunkards Wash Field in Carbon County (Lamarre 2001, Utah Geological Survey 2004), and Nuccio and Roberts (2003, p. 32) show vitrinite reflectance values of less than 0.60 at the base of the Mancos Shale in much of the eastern and southern parts of the Wasatch Plateau. Higher values are indicated for parts of the northwestern Plateau in Sanpete County. These data suggest that the potential for CBNG occurrence in the Fishlake National Forest is less than the potential in the Manti-LaSal National Forest.

In addition to the coals, gas in conventional sandstone reservoirs in the same stratigraphic sequence may be tested. This area of moderate activity potential is generally the area of Play 2107.

Coalbeds are known to occur in rocks of Cretaceous age in the Henry Mountains Basin in northern Garfield and southern Wayne counties in the eastern part of the planning area. The presence of these coals raises the possibility of CBNG activity in the basin. Coal occurs in three formations, in ascending order: the Dakota Sandstone, the Ferron Sandstone, and the Muley Canyon Sandstone. The thickest and most continuous coals are in the Muley Canyon Sandstone, with the other two zones containing thinner and less continuous beds (Law 1980, p. 326). No information is available on the gas content of the coal, and the USGS has not produced an assessment of the potential resource. In many areas, the Muley Canyon

1 *AU 50200184 was not assessed by the USGS.*

coal is at or near the surface, often exposed on the tops and flanks of mesas. The coal-bearing rocks are deeper in the southwestern part of the basin, which may provide some potential for CBNG retention. No oil and gas leases currently exist in the Henry Mountains Basin.

The greatest potential for oil and gas activity appears to be in Sevier and Sanpete counties within the Sevier Frontal Zone Play (USGS-1907) and in the Wasatch Plateau area of these same two counties (gas in Cretaceous coals and sandstones). This potential is rated as high in the Sevier Frontal Zone Play and moderate in the northern part of the Wasatch Plateau, decreasing toward the southwest. Less activity is predicted in the remaining parts of the planning area, but exploration wells will probably continue to be drilled at near the historical rate (0.9 to 3.12 per year) if oil and gas prices remain at current levels or increase, as is generally expected.

RFD Baseline Scenario Assumptions and Discussion

In developing the baseline scenario, it was assumed that all potentially productive areas are open under standard lease terms and conditions, except those areas designated as closed to leasing by law, regulations, or executive order. The largest block of excluded lands would be the wilderness study areas (WSA), but most of these are in areas where the potential for activity is low.

Long-term well completion rates for 1940 to 2004 have averaged slightly more than three wells per year. When only the past 15 years (1990 to 2004) are considered, the rate drops to slightly less than one well per year (IHS Well Data 2004). Recent interest in parts of the planning area indicates that activity during the next 15 years will be considerably higher than that for either of these intervals.

For purposes of estimating the number of wells to be drilled during the next 15 years, the planning area has been divided into four geographic areas, defined by USGS plays and assessment units. These are (1) the eastern portion of Wayne and Garfield counties (generally east of R. 12 E.), which is underlain by true Paradox Basin plays (USGS-2101, USGS-2102, USGS-2103, and USGS-2105); (2) the southern part of the planning area, as defined by the Permo-Triassic Unconformity Play (USGS-2106); (3) the Wasatch Plateau, defined by the Cretaceous Sandstone Play (USGS-2107), but also including CBNG in the Ferron, Emery, and Blackhawk coals; and (4) the area from the eastern boundary of the Sevier Frontal Zone Play (USGS-1907) to the western boundary of the planning area.

Potential for activity in Areas (plays included in each area are listed in Table A12-1) 1 and 2 (entire southern part of the planning area) is considered to be low, as noted above. Exploration in these areas is expected to continue at near historic rates (considered to be three wells per year). This would produce 45 wells during the projection period (15 years).

Activity levels in Area 3 are expected to be higher because of the existence of coal in the Ferron, Emery, and Blackhawk formations, as well as conventional sandstone reservoirs. The Utah Geological Survey (2004, p. 38) projects four CBNG wells for the Fishlake National Forest during the next 15 years, and this number will be used here for the southern part of the Wasatch Plateau. Potential for drilling activity on the northern part of the plateau (Manti-La Sal National Forest) is considered to be higher, as discussed above. In the northern part of the plateau, 45 wells (three per year) are projected, resulting in a total of 49 wells in Area 3 during the next 15 years.

The Sevier Frontal Zone Play (USGS-1907) and adjacent areas in western Sevier and Sanpete counties are expected to be the focus of activity during the life of the plan. At the time of this report, two wells have been completed in the Covenant Field of the Wolverine Unit. Seven additional, collocated wells are currently permitted. Moulton and Pinnell (2005, p. 42) anticipate six or more additional wells along the play by mid-2005. This would result in a total of at least 13 wells for the first half of 2005.

Play 1907 is geologically similar to the Utah-Wyoming Overthrust Belt, which was the site of major exploration and development in the 1970s, but includes a larger area than the productive area around the Pineview Field (Moulton and Pinnell 2005). This central Utah thrust belt overlaps the hypothetical Late Paleozoic Play (USGS-1902), and the thrust play (USGS-1907) is extended to the western boundaries of Sevier and Sanpete counties. Moulton and Pinnell (2005) seem to concur, showing a lease area, related to this thrust play, extending west of the Sevier and Sanpete county lines. Leases in this area commanded high bonus bids at the June 2004 BLM lease sale. If the analogy holds true, we can expect exploration activity along the length of the play, followed by field development around discoveries. Moulton and Pinnell (2005, p. 42) reported that, during the 5 years after the 1975 discovery of the Pineview Field in northern Utah, 175 wildcat wells were drilled, leading to the discovery of 11 new fields. This averages 16 wildcat wells drilled for each field discovered. The course of development for the Pineview Field area may provide an indication of what will occur in western Sevier and Sanpete counties.

Additional data on the Utah-Wyoming Overthrust Belt indicates that between 1976 and 1997 a total of 485 wells were drilled (Vrona, personal communication, 2005). One hundred thirty-one (27 percent) of these wells were completed as dry holes. This number equates to a rate of 24 wells drilled per year; and if this drilling rate is projected for Area 4, a total of 360 wells would be drilled during the next 15 years.

Table A12-1 provides a summary of these estimates for each area.

Table A12-1. Number of Wells by Area

Area	Number of Wells
Combined Areas 1 and 2a	45
Area 3b	49
Area 4c	360
Total	**454**

a Plays 2101, 2102, 2103, 2104, 2105, 2106, and 2403.
b Play 2107.
c Plays 1907 and 1902.

Most of the 45 wells in Areas 1 and 2 will probably be on BLM lands. The northern part of Area 3 is in the Manti-La Sal National Forest, and the southern part is in the Fishlake National Forest; therefore, all the 49 projected wells for this area are likely to be on national forest lands. Area 4 (USGS-1907) contains a mixture of BLM, state, and private lands; however, state acreage is much less than BLM and private holdings, which are approximately equal in proportion. The 360 wells in Area 4 are expected to be divided between federal and private lands. Overall, 10 percent of the wells are projected to be on national forest lands, 45 percent on BLM lands, 5 percent on state lands, and 40 percent on private lands.

This projection should not be considered a ceiling for permitting additional wells. Any upper limit on drilling should be based on total surface disturbance and should consider ongoing reclamation, drilling multiple wells from a single pad, and other factors.

SURFACE DISTURBANCE DUE TO OIL AND GAS ACTIVITY ON ALL LANDS

Oil and Gas

Geophysical Surveys

Future surface disturbance will result largely from geophysical surveys and drilling (and associated access). The Utah Geological Survey (2004) projected that approximately 625 line miles of geophysical surveys would be required in the 1,250 square miles of prospective lands in the Fishlake National Forest. Area 3 is approximately this size; thus, using the above ratio of line miles to square miles, approximately 600 line miles can be projected for the planning area portion of the Wasatch Plateau. Also following the Utah Geological Survey's Fishlake estimates, about 50 percent of the surveys would be buggy mounted and 50 percent would be conducted by helicopter, resulting in approximately 300 line miles for each type of disturbance. The Utah Geological Survey (2004) estimates that buggy-mounted surveys disturb 1.2 acres per line mile, whereas helicopter-conducted surveys disturb only 0.007 acre per line mile.

On the basis of these projections, the total disturbance would be (300 x 1.2) + (300 x 0.007) = 360 + 2.1 = 362.1 acres (rounded to 360 acres).

Approximately 1,260 square miles of Play 1907 lies within the planning area, but leasing interest covers a somewhat larger total area. Since the discovery of the Covenant Field, several lessees have expressed interest in obtaining permits for geophysical exploration on BLM lands. Interest in geophysical surveys on private lands in the play area will increase in a similar manner. At this point, it is not clear how much of the work will be conducted by buggy and how much by helicopter, nor is it clear how much will be 2-D and how much will be 3-D. Some surveys will probably be conducted by vibroseis. Early discussions indicate that BLM can expect several hundred miles of seismic surveys during the next few years on BLM and private lands. BLM is estimating an average of 250 miles of survey per year over the 15-year period under consideration. Activity may exceed this average in the near future but is likely to decrease later in the cycle. If most of the surveys are buggy mounted, the total disturbance in Area 4 is likely to be **4,500 acres** (3,750 miles x 1.2 acres/mile).

Few surveys are expected in the remaining parts of the planning area (Areas 1 and 2) based on past activity and current interest. A total of 200 miles of geophysical surveys is proposed for the 15-year time period, resulting in **240 acres** of disturbance in these areas.

On the basis of these projections, the total surface disturbance expected from **geophysical surveys in the planning area would be 360 + 4,500 + 240 = 5,100 acres.**

Wells

Forty-nine wells are projected for Area 3 (Wasatch Plateau). The Utah Geological Survey (2004) assumed a drill pad of size of 2 acres and 5 miles of road (4 acres of disturbance per mile) for each well in the Fishlake National Forest. Using these values, the 49 projected wells would impact approximately **1,100 acres**.

Areas 1, 2, and 4 are projected to contain 405 wells overall. For Area 4, many of these wells would probably be directional wells from a single drill pad. Based on the projection of 360 wells for this area, with an average of three wells per pad, the number of well pads for Area 4 is projected at 120. The 45 wells in Areas 1 and 2 are assumed to be single well pads (one well per pad). Thus, the total number of

pads for the three areas is projected at 165. Assuming a pad size of 4 acres plus 2 miles of road (with 4 acres of disturbance per mile) would result in a projected surface disturbance of **1,980 acres**.

On the basis of these projections, the total surface disturbance in the planning area from **drilling 454 wells would be 1,100 + 1,980 = 3,080 acres**.

Summary

Total surface disturbance for the planning area from all oil and gas activity (geophysical surveys and wells) is projected at 5,100 + 3,080 = 8,180 acres.

The disturbance estimated above will be future disturbance during the 15-year life of the plan. Current disturbance is minimal, and areas of past disturbance have largely been reclaimed. Disturbance associated with future nonproductive wells should be reclaimed within 3 to 4 years after a well has been plugged and abandoned.

TAR SANDS

The unconventional resource contained in the Tar Sand Triangle STSA received considerable industry interest in the late 1970s and early 1980s. Applications were received to convert existing oil and gas leases to combined hydrocarbon leases under the terms of the Combined Hydrocarbon Leasing Act of 1981. BLM and the National Park Service initiated an environmental impact statement (EIS) to consider the applications, but the EIS was never completed and the conversions are still pending. No wells are projected for exploration or development, because of the unfinished EIS, the uncertain future of oil sand as an economic resource, and the belief that any proposed activity would not follow conventional oil and gas techniques and would be better considered in a site-specific National Environmental Policy Act (NEPA) document.

STATEMENT OF QUALIFICATIONS

This RFD was prepared by James Fouts, Geologist in the Utah BLM State Office. Mr. Fouts has B.S., M.S., and Ph.D. degrees in geology and has worked for Shell Oil Co., Essex International Corporation, Auburn University, the U.S. Bureau of Mines Salt Lake City Research Center, the U.S. Geological Survey, the U.S. Minerals Management Service, Westminster College, and Salt Lake City Community College.

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APPENDIX 13—COUNTY PLAN PUBLIC LAND COMMENTS SUMMARY

Section 202 (c) (9) of the Federal Land Policy and Management Act of 1976 (FLPMA) states that "Land use plans of the Secretary [of the Interior]…shall be consistent with state and local plans to the maximum extent he finds consistent with federal law and purposes of this Act." In developing the Richfield Resource Management Plan (RMP), the Bureau of Land Management (BLM) is committed to considering state and local plans. In the case of Utah counties, "local plans" are titled "general management plans."

In 1992, the Utah State Legislature adopted the "County Land Use Development and Management Act." This legislation's purpose was to enable counties to develop comprehensive general management plans for their present and future needs and growth and development of lands within their borders. Counties completed general management plans in the mid to late 1990s, with funding provided by the Governor's Office of Planning and Budget. Public lands and resources are only one of many topics addressed in the plans.

This document summarizes statements, comments, and direction provided by the counties on the public land and resource management contained in the general plans of the five counties that the BLM's Richfield Field Office (RFO) encompasses.

This document makes no judgments about the appropriateness or correctness of the counties' statements; it simply records them as written. Resources are listed below in the sequence in which they appear in Appendix C of the BLM's *Land Use Planning Handbook,* H-1601-1. Because county plans are organized differently, this sometimes required summarizing or taking county plan statements out of context. Consequently, a page attribution for each statement cited is included. If readers have questions, they are invited to check the county plans. Not every county commented on every resource, and none of the counties commented on some resources of concern to the BLM.

GENERAL STATEMENTS

Garfield County

- The small private land base cannot be effectively sustained without considering the management of the public lands. Therefore, county leaders will develop a cooperative working relationship with all government agency managers to ensure the inclusion of local perspectives and concerns in public land management directions. (Garfield, p. 3-2)
- Practice has shown that attempts to manage natural resource development with a single resource focus fail to reflect the true scope of impacts to the natural and built environment. At the same time, the "ecosystem management" concept, as described by federal agencies, tends to treat humans as intruders in the natural system. County leaders reject this supposition and will insist that natural RMPs and/or "ecosystem" management plans for all county lands, public or private, consider humans as part of the system. (Garfield, p. 3-2)
- …the county deems it critical that RMPs provide for range improvements, current grazing on public lands be preserved, county water rights be maintained, and public lands timber harvesting be continued and mining leases be considered and encouraged. (Garfield, p. 6-8)
- …it is in the county's best interest that BLM/U.S. Forest Service (USFS) management practices encourage economic ecological sustainability… (Garfield, p. 6-8)

Piute County

- Because about 85 percent of the land area in Piute County is publicly owned, it is extremely important that consideration be given to the coordination and consistency with the federal and state RMPs. It is the intent of the Piute County General Plan to influence the planning processes and management practices occurring on these publicly administered lands… (Piute, p. 2)
- …it is in the county's best interest that BLM and USFS lands be managed for multiple use [and] access is maintained on public lands. (Piute, p. 11)

Sanpete County

- The Sanpete County Commission shall establish a standing Planning Commission Subcommittee on Public Lands. (Sanpete, p. 10-9)
- Given that Sanpete County's economic stability depends on public lands…this General Plan policy: (a) requires federal and state agencies to coordinate present and future land use plans with and through the Sanpete County Public Lands Committee, planning commission, and county commission; (b) requires public lands in Sanpete County to be managed under the principles of multiple-use and sustained yield for which the property is intended. (Sanpete, p. 10-9)
- Federal…agencies shall also endeavor to work closely with Sanpete County officials in resolving conflicts between private and public entities when issues arise. (Sanpete, p. 10-9)

Sevier County

- Multiple-use activities on public lands in Sevier County should continue and should include uses such as agricultural grazing, fishing and hunting, mineral exploration and mining, recreation, wildlife habitat and timber sales…. Federal land agencies should seek input through the Sevier County Public Lands Committee on land use management decisions within the county… (Sevier, p. 3-10)
- Because Sevier County is economically dependent on the use and development of public land resources, a principal concern is that public land use and road management decisions are based on input from county officials and residents. Consistent with federal regulations, federal land managers have a responsibility to inform and involve local county and community leaders and multiple users of public lands in public land access decisions. (Sevier, p. 9-3)

Wayne County

- […the livestock and agriculture industries] currently contribute significantly to the county's lifestyle and economic base and are heavily dependent on the use and availability of public lands and resources. We view the use of these lands as a traditional property right. Therefore, we require that RMPs provide for range improvements, current stocking rates on public lands be preserved, county water rights be maintained, and public land timber harvesting be continued. (Wayne, p. 10)
- Wayne County reminds all public land managers…of their responsibility to the citizens of Wayne County to consider any impact their public land decisions will have on the private property of Wayne County. (Wayne, p. 10)
- …it is the county's desire that each resource be managed for the optimal economic return, but in ways that do not sacrifice the county's natural aesthetic values. (Wayne, p. 12)
- Wayne County supports preserving traditional multiple use of resources. (Wayne, p. 13)

- Wayne County…requires all federal and state public land and resource managers to consider the impact of management decisions on Wayne County custom and culture and economic base. (Wayne, p. 17)
- Wayne County supports the multiple-use concept on Parker Mountain with common sense environmentalism. (Wayne, p. 19)
- When you manage resources, you manage people and their lifestyle. We believe all resources should be managed for the multiple use concept, grazing, mining, and timber. (Wayne, p. 21)
- The BLM should be allowed to manage the National Park Service (NPS) lands as though they were regular BLM land, except for the areas of critical environmental concern (ACEC) near the campground, visitor center, etc. (Wayne, p. 22)

NATURAL, BIOLOGICAL, AND CULTURAL RESOURCES

Air

Garfield County

- The preservation of clean air is one of the goals of Garfield County. Currently, this goal does not present a conflict with economic or resource development, except in a few selected areas… (Garfield, p. 4-2)

Piute County

- Air quality in Piute County is excellent. Many residents value clean air as a cultural benefit associated with the rural county lifestyle. (Piute, p. 78)

Wayne County

- Air quality in Wayne County is excellent. Many residents value clean air as a cultural benefit associated with the rural county lifestyle. (Wayne, p. 99)

Soil and Water

Garfield County

- The county will identify and map all drinking water source protection zones in effect in the county and will recognize their importance in land use permit reviews and approvals. (Garfield, p. 3-4)

Piute County

- Piute County wishes to maintain its existing water rights. (Piute, p. 14)

Sevier County

- Sevier County should support efforts to improve the vegetative management and protect the watershed on public lands. Activities such as chaining, burning, fencing, reseeding, grazing, and others are beneficial to the watershed. (Sevier, p. 3-11)

Wayne County

- Wayne County wishes to preserve and expand existing water rights. (Wayne, p. 13)
- …we feel all dam diversions, ditches, and other waterways and rights must be recognized and honored by any management plan. (Wayne, p. 21)
- Salinity problems should be addressed by federal entities that possess the means to solve the problem. (Wayne, p. 21)
- Water is a critical resource in the Henry Mountain area. It should be used as it has been used with protection for all the rights and privileges of the people with established use[s]… The riparian area should be treated with common sense environmental concern. (Wayne, p. 22)

Cultural Resources

Garfield County

- The subcommittee thought that protecting the county's traditional land uses and rural aesthetics should be one of the ordinance's main objectives. (Garfield, p. 7-1)

Sevier County

- Expanding the county's historical values and cultural assets and preserving its rural lifestyle are land use and planning priorities in Sevier County. (Sevier, p. 4-9)
- It is the intent of these land use policies to foster and preserve the county's culture… (Sevier, p. 4-9)

Wayne County

- Wayne County…requires all federal and state public land and resource managers to consider the impact of management decisions on Wayne County custom and culture and economic base. (Wayne, p. 17)
- Historical and cultural values are of great importance to Wayne County. All historical and cultural values and uses should be identified, recognized, and honored. (Wayne, p. 21)

Visual Resources

Wayne County

- National Park…viewsheds should not be expanded nor should viewsheds be maintained on BLM lands. (Wayne, p. 12)

Fish and Wildlife

Garfield County

- …the county desires that wildlife resources be comprehensively managed without detriment to county economic interests. (Garfield, p. 6-8)
- …wildlife numbers must be established for designated areas within the county. It is county policy that introduction of any exotic plant or animal species into the county should not take place without formal concurrence by the county commission and that public hearings should be held in Garfield County prior to any such introductions. (Garfield, p. 6-10)

- Garfield County believes watchable wildlife areas should be developed. (Garfield, p. 6-10)
- Garfield County has organized a wildlife committee to make recommendations on wildlife numbers. Committee recommendations should be based on balancing economic, recreational, environmental, and other needs and demands. (Garfield, p. 6-10)

Piute County

- …the county desires that wildlife resources be comprehensively managed to preserve and enhance…economic and recreational opportunities. (Piute, p. 10)

Sevier County

- Hunting and fishing are integral parts of the culture and lifestyle in Sevier County. At certain times of the year, virtually all of the economy of Sevier County is focused on hunting, fishing, and related seasonal activities. (Sevier, p. 3-7)
- Grazing is another important consideration in managing wildlife. The agencies must balance grazing versus the special interest of hunters and revenue from the permits for wildlife. (Sevier, p. 3-7)
- Wildlife is a vital part of the lifestyle and culture of Sevier County. (Sevier, p. 3-9)
- Sevier County land use policies should encourage…reasonable wildlife management as long as this management does not create a single-use status adversely impacting or limiting other resources on public lands. (Sevier, p. 3-11)

Wayne County

- We require that wildlife resources be comprehensively managed in ways that optimize wildlife resources opportunities in coordination with agriculture, livestock, timber, recreation, and other important economic interests. (Wayne, p. 11)
- Wayne County supports establishing and maintaining upper limits on big game herd sizes. (Wayne, p. 14)
- Wayne County supports increasing the number of cougar permits. (Wayne, p. 14)
- …we support a controlled number of antelope at no more than 400 head [on Parker Mountain].
- Bison are part of the region and should be managed not to exceed a herd of 200 head. (Wayne, p. 21)
- Management of Big Horn Sheep should continue as they are presently being managed. (Wayne, p. 22)

Fire Management

Sevier County

- Sevier County officials intend to adopt agreements and ordinances consistent with fire, interface, mitigation, and natural hazard codes that assist in protecting private and public property within the county from natural hazards and wildland fires. (Sevier, p. 3-33)

RESOURCE USES

Forestry

Garfield County

- Continue to support the timber industry with the goal of achieving the highest long-term sustained production level. (Garfield, p. 5-4)

Piute County

- …the county supports responsible timber and woodland resource management. (Piute, p. 11)
- Piute County supports responsible timber/wood product management practices on public lands. (Piute, p. 12)
- Piute County believes that federal and state public land/natural resource stewards should manage timber and wood products in ways that allow continued public access and use. (Piute, p. 20)

Sevier County

- …timbering shall be actively extended and promoted in Sevier County. (Sevier, p. 3-33)

Wayne County

- …we require that RMPs provide for public land timber harvesting to be continued. (Wayne, p. 10)
- Wayne County seeks to maintain the current level of timber harvest of 4 million board feet. (Wayne, p. 15)
- Wayne County supports restructuring timber sale contracts to eliminate the discrimination of our local mills caused by the current sale size and administration. (Wayne, p. 15)

Livestock Grazing

Garfield County

- Maintenance and expansion of the livestock trade should be encouraged. (Garfield, p. 5-4)
- …the county deems it critical that RMPs provide for range improvements [and] current grazing on public land be preserved.
- …the number of animal unit months (AUM) allocated within the county should be expanded to the full carrying capacity of the forage resource. (Garfield, p. 6-10)

Piute County

- …the county desires to preserve and enhance the livestock and agricultural industries within the county. (Piute, p. 10)
- Piute County supports maintaining and increasing…(AUMs) through developing county policies supporting affordable grazing fees and range improvement incentives. (Piute, p. 12)
- Piute County wishes to expand the number of AUMs. (Piute, p. 13)
- The county supports maintaining affordable grazing fees and implementing range improvement incentive programs on public lands… (Piute, p. 16)

Sevier County

- Commercial grazing is very important to the economy and heritage of Sevier County. The BLM and USFS should continue to promote, permit, and regulate grazing on public lands. However, removing livestock should not be the only option for managing public lands for utilization. (Sevier, p. 3-10)
- Sevier County should support the current PRIA formula for determining AUMs for grazing public lands. (Sevier, p. 3-10)
- Local agricultural boards, councils, and permittees could be and should be consulted by the federal agencies to help with local input on grazing issues. (Sevier, p. 3-10)

Wayne County

- Wayne County believes BLM and USFS rangelands should be managed and improved using all effective traditional range improvement methods. (Wayne, p. 13)
- Wayne County supports increasing predator control. (Wayne, p. 14)
- Wayne County supports maintaining the number of…AUMs within the county. (Wayne, p. 15)
- We support allotment boundaries as established and livestock numbers and time of use as prior to drought conditions [on Parker Mountain]. (Wayne, p. 20)

Recreation

Garfield County

- The county will support efforts to establish hiking and off-highway vehicle (OHV) trails across public lands, including a bicycle trail along Highway 12, which is a designated Scenic Byway. (Garfield, p. 2-6)
- … to strengthen its economic base, the county wishes to increase its revenue opportunities through enhancing county recreational opportunities and developing destination-related activities. (Garfield, p. 5-3)
- Garfield County supports exploring tourism and recreational opportunities in the county. (Garfield, p. 5-3)
- Garfield County supports creating new attractions and recreational facilities within the county. (Garfield, p. 5-3)

Piute County

- …the county desires to strengthen its economic base by further responsibly developing [recreation] resources. (Piute, p. 10)
- Piute County supports exploring tourism and recreational opportunities within the county. (Piute, p. 12)
- Explore and encourage the development of recreational, fishing, and wildlife opportunities within the county. (Piute, p. 19)

Sevier County

- The Paiute ATV Trail is a series of roads and trails, tied together and mapped for the use of off-road and all terrain vehicles (ATV). This trail system resulted from a cooperative effort among the Utah State Parks Service, County Commissions, the BLM, the USFS, and many community groups. Sevier County wants to ensure this trail system remains intact well into the future. (Sevier, p. 3-6)

- Preserving, protecting, and promoting increased use of recreational resources in Sevier County is a fundamental policy of this general plan….Sevier County shall continue its support for increased commerce, travel, tourism, and land uses in mountain and valley locations that are compatible with present multiple land uses in the county. (Sevier, p. 4-9)
- Sevier County citizens and officials strongly support the Paiute ATV Trail system and the designation of ATV routes within communities in the county that allow ATV riders access to necessary and required services in Sevier County communities and resort areas. (Sevier, p. 9-19)
- The county would like to continue to capitalize on its proximity to limitless recreational sites and activities and to focus on its human resources and natural assets as a means for attracting recreationists, travelers, and visitors as participants in the county's exceptional historic and scenic features. Preserving, protecting, and promoting increased use of recreational resources in Sevier County is a fundamental policy of this General Plan… (Sevier, p. 12-15)

Wayne County

- …it is our intent that recreational growth be carefully planned to balance recreational developments with the county's ability to provide essential services, ensure other important economic resources are not sacrificed for the benefit of recreational development, [and] preserve the county's custom and culture. (Wayne, p. 11)
- The impact of increased recreation should be managed to protect the environment as other uses are. We believe in the "pack-it-in, pack-it-out" concept. (Wayne, p. 21)
- Recreation, hunting, hiking, boating, camping, and four-wheeling should be managed to protect the environment and other uses. (Wayne, p. 22)
- Wayne County supports exploring tourism and recreational opportunities in the county. (Wayne, p. 31)
- Create the financial mechanisms that are necessary for generating the public funds needed to cover the costs associated with providing services to an increased number of tourists. (Wayne, p. 32)

Lands and Realty

Garfield County

- Transfers of private land to federal or state ownership should not result in a net "private land" acreage loss, unless they result in long-term, ongoing, economic benefits to the county. (Garfield, p. 6-8)
- Garfield County supports identifying possible federal and state land exchanges, with the understanding that such exchanges will not increase the net acreage of federal lands in the county. (Garfield, p. 6-9)
- Garfield County will normally, before supporting or approving any federal-state-county exchanges, involve the County Natural Resource/Land Use Committee. (Garfield, p. 6-10)

Sanpete County

- Sanpete County should encourage development around existing municipalities with existing infrastructure for development. (Sanpete, p. 9-11)
- This policy documents the intent of the Sanpete County Commission…to propose land uses or exchanges that assure there will be no net loss of private lands in Sanpete County. (Sanpete, p. 10-9)

Sevier County

- Sevier County leaders may identify any federal lands in the county for exchange with School Trust Lands. Some possible areas that Sevier County leaders may want to be exchanged are Poverty Flat south of Monroe, some BLM land south of Glenwood, and some lands west of Aurora. (Sevier, p. 3-4)

Wayne County

- No net increase in federal ownership as a result of state school land and federal land exchanges within the county. (Wayne, pp. 11-12)
- No involuntary transfer of private lands to public ownership if such transfers result in a tax revenue and value loss. (Wayne, p. 12)
- State school trust lands should not be consolidated. Checkerboard should be maintained on BLM lands. (Wayne, p. 12)
- The county supports privatization of land. (Wayne, p. 12)
- Transfers of private lands to federal or state ownership should not result in a net "private land" acreage loss. (Wayne, p. 12)
- Wayne County supports establishing a policy statement supporting no involuntary transfer of private land to federal or state ownership if such transfers result in a tax or revenue loss. (Wayne, p. 14)
- Where possible and necessary, any public land needed by towns or cities for expansion purposes should be provided if it does not infringe on others with established use. (Wayne, p. 20)
- All transactions should be brought to the attention of county officials before the exchange takes place. (Wayne, p. 21)

Minerals and Mining

Garfield County

- Garfield County supports aggressively pursuing coal and other mineral resource development. (Garfield, p. 5-3)
- Continue to support the highest economically allowable development of the…Henry Mountain coal reserves. (Garfield, p. 5-4)
- Continue to support the redevelopment of Ticaboo and the uranium mines and mill. (Garfield, p. 5-4)

Piute County

- …it is in the county's best interest that federal and state land management plans continue to provide opportunities for the growth and development of the mining industry. (Piute, p. 11)
- Piute County wishes to ensure mineral development within the county continues as an option and to pursue the development of mineral resources. (Piute, p. 12)
- Piute County supports mineral resource development. As a result of recent national mining/mineral law changes, the county believes that it is important to protect and preserve existing mining rights and privileges. The county also believes that future mining/mineral interests should be protected and that development opportunities should not be stifled by prohibitive regulations and restrictions. (Piute, p. 23)

Sevier County

- Minerals, mining, and mineral related production…shall be actively extended and promoted in Sevier County. (Sevier, p. 3-33)

SPECIAL DESIGNATIONS

Wilderness Study Areas

Sevier County

- There are no lands currently being considered by any federal agency for wilderness designation in Sevier County. (Sevier, p. 3-4)

Wayne County

- Wayne County does not favor any land being designated as wilderness in Wayne County. (Wayne, p. 20)
- Wayne County feels all land designated as Wilderness Study Areas (WSA) should be released immediately and opened for mineral exploration. (Wayne, p. 21)

Wild and Scenic River Suitability

Garfield County

- Garfield County will, if it deems appropriate, comment on and may develop and submit proposals for Wild and Scenic River designations to the appropriate federal land management agencies. (Garfield, p. 6-11)

Wayne County

- We feel that Wayne County does not have any rivers or streams that qualify for Wild and Scenic River designation. We feel this designation is too restrictive and would interfere with water rights upstream. (Wayne, p. 21)
- We do not feel the Fremont River meets the criteria as a Wild and Scenic River because the eastern portion of the river, where it joins the Dirty Devil, has been dry in some summer months. (Wayne, p. 22)

Areas of Critical Environmental Concern

Wayne County

- Special designation such as ACECs should not be considered at this time. We feel ACEC designation to be too restrictive for the multiple use concept. (Wayne, pp. 20-21)
- Special designation such as ACEC should be designated only in the National Parks where there is heavy pressure by visitors. (Wayne, p. 22)
- The BLM should be allowed to manage the National Park Service lands as though they were regular BLM land, except for the ACEC near the campground, visitor center, etc. (Wayne, p. 22)

SUPPORT

Transportation and Facilities

Garfield County

- Maintain or improve the existing roadway system within the county, including the preservation of RS-2477 access rights-of-way (ROW) to federal and state lands for mining, timber, grazing, etc. Such activity is authorized by state law (UCA 27-12-25). (Garfield, p. 2-5)
- Existing public access to public land [should] be protected and all RS-2477 ROWs preserved. (Garfield, p. 6-8)
- It is the policy of Garfield County to preserve and enhance access to public lands. (Garfield, p. 6-11)

Piute County

- Piute County wishes to ensure local input regarding access on existing roads (RS2477) be maintained. (Piute, p. 12)
- In Piute County, the preservation of RS 2477 rights is very important because land within the county is predominantly owned by state government and the Federal Government. Loss of access means loss of use and loss of revenue. Because of this, Piute County has filed various RS 2477 claims with the Bureau of Reclamation[?] at the state level as part of the congressional hearing and evaluation process… Maps of RS 2477 roads are available by contacting the Clerk's office… (Piute, p. 22)

Sevier County

- Sevier County shall continue the road use agreements with the BLM, USFS, and other agencies that own public and private lands so that rights-of-ways and access to public land are maintained. All present or expanded RS-2477 roads within Sevier County shall be recognized by applicable federal land management agencies. (Sevier, p. 3-11)
- Access to natural resources in Sevier County shall be preserved and protected. (Sevier, p. 3-33)
- Sevier County leaders also believe that federal and state regulations on access…must recognize the need for roadway maintenance and for new road development… (Sevier, p. 9-3)
- Historical and continued use of man-made trails as thoroughfares for agricultural, ranching, recreation, and related purposes, allows Sevier County to claim historical and prescriptive use on or across public lands as valid RS-2477 ROWs. (Sevier, p. 9-4)
- In cooperation with BLM and USFS land managers, Sevier County is in the process of listing all roads within the county that traverse public lands. This listing is planned for completion by the end of calendar year 1998. It is Sevier County's claim that these roads are valid public thoroughfares and are, by definition and use, granted "public right of way" status. These roads will be added to those presently identified on the county's public land and public roads ROW map on file at the Sevier County Clerk's Office. (Sevier, p. 9-4)
- Sevier County citizens shall continue to use, and to expand through appropriate procedures, RS-2477 designated roadways throughout the county. (Sevier, p. 9-18)
- Sevier County officials shall work to maintain the historical and continuing use of trail ways, byways, highways, roadways, and ROWs established by agriculturists, herders, and livestock owners in the county. (Sevier, p. 9-18)

Wayne County

- All transportation routes on public lands (e.g., primitive ROW, trails, roads, canals, ditches, pipelines, transmission lines, livestock driveways, and any other traditional use) should be protected. (Wayne, p. 12)
- Wayne County has more than 600 miles of county roads. Three hundred of these miles are west of Capitol Reef National Park. We feel all roads and highways, bridges, flumes, and culverts should be recognized and honored and be well maintained and improved as finances will allow, with 60 to 100 feet of ROW allowed wherever possible. No obstructions or gates are to be put in place unless agreed by all concerned. (Wayne, p. 20)
- Wayne County interprets highway to mean trails, stock driveways, pipelines, roads, ditches, canals, and transmission lines [with regard to RS2477 assertions]. (Wayne, p. 114)

OTHER COUNTY ISSUES

Payment in Lieu of Taxes

Garfield County

- Garfield County wishes to increase payments in lieu of taxes (PILT). (Garfield, p. 5-3)
- The county takes the position that it should not be penalized, through loss of federal or state shared revenues, such as PILT, mineral leasing, or other revenues when federal lands become state lands or when state school trust lands are exchanged. (Garfield, p. 6-9)

Sanpete County

- Public land owners shall provide an equitable in-lieu payment and bear a proportionate share of the costs associated with administering public lands in Sanpete County. (Sanpete, p. 10-9)

Wayne County

- Wayne County supports an increase in…PILT by the Federal Government. (Wayne, p. 14)

Search and Rescue

Garfield County

- …Garfield County…supports establishing a state search and rescue fund. Monies from this fund would be used to reimburse counties for county-provided search and rescue services. (Garfield, p. 4-8)
- As a matter of economic reality, Garfield County reserves the right to establish user fees for search and rescue activities, based on a user pay concept. (Garfield, p. 6-9)

Piute County

- Piute County supports a user fee for search and rescue. (Piute, p. 13)

APPENDIX 14—COMMITTED CONSERVATION MEASURES AND BEST MANAGEMENT PRACTICES FOR FEDERALLY LISTED SPECIES

CONSERVATION MEASURES

Utah BLM is committed to the conservation of federally listed species. Pursuant to the Endangered Species Act (ESA), this means that BLM will endeavor to use necessary methods and procedures to improve the status of federally listed species and their habitats to a point where the provisions of the ESA are no longer necessary. This includes ensuring that BLM actions requiring permits or approvals are consistent with the objectives of approved recovery plans for listed species.

Conservation measures are part of the programmatic Section 7 consultation with USFWS. BLM, in coordination with USFWS, developed the following list of species-specific conservation measures for activities that will be implemented under this RMP. All implementation proposals potentially impacting listed species will consider these conservation measures. Incorporating these measures will help the BLM meet the standard of "may affect, but not likely to adversely affect" for species listed under the ESA. Where BLM determines that deviation, modification, or waiver of these conservation measures is prudent and necessary, early coordination and Section 7 consultation with USFWS will be necessary. BLM will reinitiate Section 7 consultation at the project level, as necessary, to ensure proper management of listed species.

Conservation measures were developed for the following listed species inhabiting (or potentially inhabiting) lands managed by the Richfield Field Office (RFO):

- Ute ladies'-tresses (*Spiranthes diluvialis*)
- Wright fishhook cactus (*Sclerocactus wrightiae*)
- San Rafael and Winkler cacti (*Pediocactus spp.)*
- Maguire daisy (*Erigeron maguirei*)
- Last chance townsendia (*Townsendia aprica*)
- Barneby reed-mustard (*Schoenocrambe barnebyi*)
- Bald eagle (*Haliaeetus leucocephalus*)
- Colorado River endangered fish
  - Colorado pikeminnow (*Ptychocheilus lucius*)
  - Humpback chub (*Gila cypha*)
  - Bonytail chub (*Gila elegans*)
  - Razorback sucker (*Xyrauchen texanus*)
- Mexican spotted owl (*Strix occidentalis lucida*)
- Utah prairie dog (*Cynomys parvidens*)
- Southwestern willow flycatcher (*Empidonax trailii extimus*).

Ute ladies'-tresses (*Spiranthes diluvialis*)

Conservation Measures

To minimize effects to the federally threatened Ute ladies'-tresses, the BLM, in coordination with USFWS, developed the following avoidance and minimization measures. Integration of and adherence to these measures will help ensure the activities carried out during oil and gas development (including but

not limited to drilling, production, and maintenance) are in compliance with the ESA. Ute ladies'-tresses habitat is provided some protection under Executive Orders 11990 (wetland protection) and 11988 (floodplain management), as well as Section 404 of the Clean Water Act. Although plants, habitat, or populations may be afforded some protection under these regulatory mechanisms, the following conservation measures should be included in the Plan of Development:

1. Pre-project habitat assessments will be completed across 100 percent of the project disturbance area, including areas where hydrology might be affected by project activities, within potential habitat[1] prior to any ground disturbing activities to determine if suitable Ute ladies'-tresses habitat is present.

2. Within suitable habitat[2], site inventories will be conducted to determine occupancy. Inventories:

    a. Must be conducted by qualified individual(s) and according to BLM and Service accepted survey protocols,

    b. Will be conducted in suitable and occupied[3] habitat for all areas proposed for surface disturbance or areas that could experience direct or indirect changes in hydrology from project activities,

    c. Will be conducted prior to initiation of project activities and within the same growing season, at a time when the plant can be detected, and during appropriate flowering periods (usually August 1st and August 31st in the Uintah Basin; however, surveyors should verify that the plant is flowering by contacting a BLM or FWS botanist or demonstrating that the nearest known population is in flower),

    d. Will occur within 300' from the centerline of the proposed right-of-way for surface pipelines or roads; and within 300' from the perimeter of disturbance for the proposed well pad including the well pad,

    e. Will include, but not be limited to, plant species lists, habitat characteristics, source of hydrology, and estimated hyroperiod, and

    f. Will be valid until August 1st the following year.

3. Design project infrastructure to minimize direct or indirect impacts to suitable habitat both within and downstream of the project area:

    a. Alteration and disturbance of hydrology will not be permitted,

    b. Reduce well pad size to the minimum needed, without compromising safety,

    c. Limit new access routes created by the project,

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1 Potential habitat is defined as areas that satisfy the broad criteria of the species habitat description; usually determined by preliminary, in-house assessment.

2 Suitable habitat is defined as areas that contain or exhibit the specific components or constituents necessary for plant persistence, determined by field inspection and/or surveys, and may or may not contain Ute ladies'-tresses. Habitat descriptions can be found in Recovery Plans and Federal Register Notices for the species at <http://www.fws.gov/endangered/wildlife.html>.

3 Occupied habitat is defined as areas currently or historically known to support Ute ladies'-tresses; synonymous with "known habitat."

d. Roads and utilities should share common right-of-ways where possible,

e. Reduce width of right-of-ways and minimize the depth of excavation needed for the road bed,

f. Construction and right-of-way management measures should avoid soil compaction that would impact Ute ladies' tresses habitat,

g. Off-site impacts or indirect impacts should be avoided or minimized (i.e. install berms or catchment ditches to prevent spilled materials from reaching occupied or suitable habitat through either surface or groundwater),

h. Place signing to limit off-road travel in sensitive areas,

i. Stay on designated routes and other cleared/approved areas, and

j. All disturbed areas will be re-vegetated with species approved by FWS and BLM botanists.

4. Within occupied habitat, project infrastructure will be designed to avoid direct disturbance and minimize indirect impacts to populations and to individual plants:

   a. Follow the above (#3) recommendations for project design within suitable habitats,

   b. Buffers of 300 feet minimum between right of way (roads and surface pipelines) or surface disturbance (well pads) and plants and populations will be incorporated,

   c. Surface pipelines will be laid such that a 300-foot buffer exists between the edge of the right of way and the plants, using stabilizing and anchoring techniques when the pipeline crosses habitat to ensure the pipelines don't move towards the population,

   d. Before and during construction, areas for avoidance should be visually identifiable in the field, e.g., flagging, temporary fencing, rebar, etc.,

   e. Where technically and economically feasible, use directional drilling or multiple wells from the same pad.

   f. Designs will avoid altering site hydrology and concentrating water flows or sediments into occupied habitat.

   g. Place produced oil, water, or condensate tanks in centralized locations away from occupied habitat, with berms and catchment ditches to avoid or minimize the potential for materials to reach occupied or suitable habitat.

   h. Minimize the disturbed area of producing well locations through interim and final reclamation. Reclaim well pads following drilling to the smallest area possible.

5. Occupied Ute ladies'-tresses habitats within 300 feet of the edge of the surface pipelines' ROWs, 300 feet of the edge of the roads' ROWs, and 300 feet from the edge of the well pad shall be monitored for a period of 3 years after ground disturbing activities. Monitoring will include annual plant surveys to determine plant and habitat impacts relative to project facilities. Habitat impacts include monitoring any changes in hydrology due to project related activities. Annual

reports shall be provided to the BLM and USFWS. To ensure desired results are being achieved, minimization measures will be evaluated and may be changed after a thorough review of the monitoring results and annual reports during annual meetings between the BLM and USFWS.

6. Reinitiation of section 7 consultation with USFWS will be sought immediately if any loss of plants or occupied habitat for the Ute ladies'-tresses is anticipated as a result of project activities.

Additional site-specific measures may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with USFWS to ensure continued compliance with the ESA.

Wright fishhook cactus (*Sclerocactus wrightiae*)

Conservation Measures

The following list of measures provides species-specific guidance intended to avoid, minimize, or reduce potential adverse impacts from implementation of BLM actions under the authority of current Utah BLM LUPs on the Wright fishhook cactus (*Sclerocactus wrightiae*). This list is not comprehensive. Additional conservation measures, or other modified versions of these measures, may be applied for any given BLM-authorized activity upon further analysis, review, coordination efforts, and/or appropriate levels of section 7 consultation with the USFWS.

1. Prior to surface disturbing activities in habitat for the species, presence/absence surveys of potentially affected areas will be conducted in accordance with established protocols.

2. Appropriate avoidance/protection/mitigation will be used to manage potential impacts of similar subsequent projects. These measures should include, but are not be limited to:

    - the stabilization of soils to minimize or avoid impacts related to soil erosion;
    - marking/flagging of suitable and/or occupied habitat (including predetermined buffers) prior to development to avoid trampling by crew members or equipment during disturbance related activities; and
    - require project proponents to conduct surveys and monitoring actions using BLM-approved specialists to document population effects and individual impacts.

3. BLM shall continue to document new populations of Wright fishhook cactus as they are encountered.

4. To assist and support recovery efforts, BLM will minimize or avoid surface disturbances in habitats that support the species.

5. BLM will encourage and assist project proponents in development and design of their proposed actions in order to avoid direct disturbance to populations or individuals where feasible. Designs should consider water flow, slope, appropriate buffer distances, possible fencing needs, and pre-activity flagging of sensitive areas that are planned for avoidance.

6. BLM will consider emergency OHV closure or additional restrictions to protect, conserve, and recover the species.

7. In areas where dispersed recreational uses are identified as threats to populations of the species, BLM will consider the development of new recreational facilities/opportunities that concentrate dispersed recreational use away from habitat, especially occupied habitat.

8. Cultural and paleontological survey/recovery technicians (i.e., archeologists and/or paleontologists), conducting work in the vicinity of known populations, will be educated in the identification of listed species in order to avoid inadvertent trampling or removal during survey, mapping, or excavation of cultural or paleontological resources.

9. Areas of viable habitat, in the vicinity of populations considered for prescribed burning, will be surveyed according to established protocols for new or undocumented populations of the species.

10. Lands being considered for exchange or disposal that contain suitable habitat for the species will be surveyed for undocumented populations, according to established protocols, prior to approval of such disposal. Lands supporting populations shall not be disposed of unless it is determined that the action will not threaten the survival and recovery of the species in accordance with the ESA and BLM Guidance and Policy Manual *6840 – Special Status Species Management*.

11. BLM will encourage the avoidance of key habitats during livestock herding and trailing activities on BLM administered lands. (Key habitats are those that are deemed necessary for the conservation of the species including, but not necessarily limited to, designated critical habitat and other occupied or unoccupied habitats considered important for the species survival and recovery as determined in coordination with the USFWS).

12. As funding permits, BLM will consider research opportunities to determine whether the mortality to recruitment ratio of 2.5 to 1, observed by Kass (2001) persists within studied populations. These observed ratios have resulted in the decline and ultimate loss of some populations. Therefore, future research might study how widespread the decline may be. To accomplish this, several populations should be selected that represent a range of habitats, locations, proximity to potential threats and relative population sizes. Populations should be monitored for changes in number and overall condition to determine whether these observed mortality rates are characteristic of the species throughout its range.

13. As funding permits, monitoring will be continued on the Hebe Devil Dizzy Gypsum Mine area to assess long-term survival and viability of transplanting populations of Wright fishhook cactus.

San Rafael and Winkler Cacti (*Pediocactus spp.)*

Conservation Measures

The following list of measures provides species-specific guidance intended to avoid, minimize, or reduce potential adverse impacts from implementation of BLM actions under the authority of current Utah BLM LUPs on the San Rafael (*Pediocactus despainii)* and Winkler cactus *(Pediocactus winkleri)*. This list is not comprehensive. Additional conservation measures, or other modified versions of these measures, may be applied for any given BLM-authorized activity upon further analysis, review, coordination efforts, and/or appropriate levels of section 7 consultation with the USFWS.

1. Prior to surface disturbing activities in habitat for the species, presence/absence surveys of potentially affected areas will be conducted in accordance with established protocols.

2. Appropriate avoidance/protection/mitigation will be used to manage potential impacts of similar subsequent projects. These measures should include, but are not be limited to:

    - the stabilization of soils to minimize or avoid impacts related to soil erosion;
    - marking/flagging of suitable and/or occupied habitat (including predetermined buffers) prior to development to avoid trampling by crew members or equipment during disturbance related activities; and
    - require project proponents to conduct surveys and monitoring actions using BLM approved specialists to document population effects and individual impacts.

3. BLM shall continue to document new populations of San Rafael and Winkler cacti as they are encountered.

4. To assist and support recovery efforts, BLM will minimize or avoid surface disturbances in habitats that support the species.

5. BLM will encourage and assist project proponents in development and design of their proposed actions in order to avoid direct disturbance to populations or individuals where feasible. Designs should consider water flow, slope, appropriate buffer distances, possible fencing needs, and pre-activity flagging of sensitive areas that are planned for avoidance.

6. BLM will consider emergency OHV closure or additional restrictions to protect, conserve, and recover the species.

7. In areas where dispersed recreational uses are identified as threats to populations of the species, BLM will consider the development of new recreational facilities/opportunities that concentrate dispersed recreational use away from habitat, especially occupied habitat.

8. Cultural and paleontological survey/recovery technicians (i.e., archeologists and/or paleontologists), conducting work in the vicinity of known populations, will be educated in the identification of listed species in order to avoid inadvertent trampling or removal during survey, mapping, or excavation of cultural or paleontological resources.

9. Areas of viable habitat, in the vicinity of populations considered for prescribed burning, will be surveyed according to established protocols for new or undocumented populations of the species.

10. Lands being considered for exchange or disposal that contain suitable habitat for the species will be surveyed for undocumented populations, according to established protocols, prior to approval of such disposal. Lands supporting populations shall not be disposed of unless it is determined that the action will not threaten the survival and recovery of the species in accordance with the ESA and BLM Guidance and Policy Manual *6840 – Special Status Species Management*.

11. BLM will encourage the avoidance of key habitats during livestock herding and trailing activities on BLM administered lands. (Key habitats are those that are deemed necessary for the conservation of the species including, but not necessarily limited to, designated critical habitat and other occupied or unoccupied habitats considered important for the species survival and recovery as determined in coordination with the USFWS).

12. As additional funding becomes available, BLM should develop a travel management plan specifically for areas of occupied and potential habitat for San Rafael and Winkler cactus.

13. As additional funding becomes available, BLM will conduct or encourage monitoring studies in areas to which topsoil has been placed with the intention of transferring the seed bank from San Rafael and Winkler cactus populations, to mitigate population losses from development activities. The purpose of these studies would be to evaluate mitigation measures for effectiveness in reestablishing populations of the species.

Maguire Daisy (*Erigeron maguirei*)

Conservation Measures

The following conservation measures provide guidance for avoiding, minimizing, or reducing potential adverse impacts to the Maguire daisy from implementing actions authorized in this RMP. This list is not all-inclusive. Additional conservation measures, or other modified versions of these measures, may be applied for any given BLM-authorized activity upon further analysis, review, coordination efforts, and/or appropriate levels of Section 7 consultation with USFWS:

1. Prior to approving surface disturbing activities in species habitat, survey for the presence of the species in potentially affected areas in accordance with established protocols.

2. Use appropriate avoidance, protection, and mitigation measures to manage potential impacts of similar, subsequent projects. Measures include, but are not be limited to:

    a. Stabilizing soils to minimize or avoid impacts related to soil erosion

    b. Marking/flagging of suitable and/or occupied habitat (including predetermined buffers) prior to development to avoid trampling by crew members or equipment during disturbance-related activities

    c. Requiring project proponents to conduct surveys and monitoring actions using BLM-approved specialists to document impacts to populations and individuals.

3. Continue documenting new populations of Maguire daisy as they are encountered.

4. To assist and support recovery efforts, minimize or avoid surface disturbances in habitats that support the species.

5. Encourage and assist project proponents in developing and designing their proposed actions to avoid directly disturbing populations or individuals. Designs should consider water flow, slope, appropriate buffer distances, possible fencing needs, and pre-activity flagging of sensitive areas that are planned for avoidance.

6. Consider emergency OHV area closures or other OHV restrictions needed to protect, conserve, and recover the species.

7. In areas where recreational uses are identified as threats to populations of the species, consider developing new recreational facilities and/or opportunities that would direct dispersed recreational uses away from habitat, especially occupied habitat.

8. Cultural and paleontological survey/recovery technicians (e.g., archaeologists and paleontologists) working in the vicinity of known populations would be educated in the

identification of listed species in order to avoid inadvertent trampling or removal during survey, mapping, or excavation of cultural or paleontological resources.

9. Survey areas of viable habitat in the vicinity of populations within areas being considered for prescribed burning for new or undocumented populations of the species.

10. Lands being considered for land tenure adjustments that contain suitable habitat for the species would be surveyed, according to established protocols prior to approval of the land tenure adjustment action. Lands supporting populations would not be disposed of unless it is determined that the action would not threaten the survival and recovery of the species in accordance with the ESA and BLM Guidance and Policy Manual 6840, Special Status Species Management.

11. Encourage the avoidance of key habitats during livestock herding and trailing activities on public lands. Key habitats are those that are deemed necessary for the conservation of the species, including, but not limited to, designated critical habitat and other occupied or unoccupied habitats considered important for the species survival and recovery as determined in coordination with USFWS.

Last Chance Townsendia (*Townsendia aprica*)

Conservation Measures

The following list of measures provides species-specific guidance intended to avoid, minimize, or reduce potential adverse impacts from implementation of BLM actions under the authority of current Utah BLM LUPs on the Last chance townsendia (*Townsendia aprica*). This list is not comprehensive. Additional conservation measures, or other modified versions of these measures, may be applied for any given BLM-authorized activity upon further analysis, review, coordination efforts, and/or appropriate levels of section 7 consultation with the USFWS.

1. Prior to surface disturbing activities in habitat for the species, presence/absence surveys of potentially affected areas will be conducted in accordance with established protocols.

2. Appropriate avoidance/protection/mitigation will be used to manage potential impacts of similar subsequent projects. These measures should include, but are not be limited to:

    - the stabilization of soils to minimize or avoid impacts related to soil erosion;
    - marking/flagging of suitable and/or occupied habitat (including predetermined buffers) prior to development to avoid trampling by crew members or equipment during disturbance related activities; and
    - require project proponents to conduct surveys and monitoring actions using BLM approved specialists to document population effects and individual impacts.

3. BLM shall continue to document new populations of Last chance townsendia (*Townsendia aprica*) as they are encountered.

4. To assist and support recovery efforts, BLM will minimize or avoid surface disturbances in habitats that support the species.

5. BLM will encourage and assist project proponents in development and design of their proposed actions in order to avoid direct disturbance to populations or individuals where feasible. Designs

should consider water flow, slope, appropriate buffer distances, possible fencing needs, and pre-activity flagging of sensitive areas that are planned for avoidance.

6. BLM will consider emergency OHV closure or additional restrictions to protect, conserve, and recover the species.

7. In areas where dispersed recreational uses are identified as threats to populations of the species, BLM will consider the development of new recreational facilities/opportunities that concentrate dispersed recreational use away from habitat, especially occupied habitat.

8. Cultural and paleontological survey/recovery technicians (i.e., archeologists and/or paleontologists), conducting work in the vicinity of known populations, will be educated in the identification of listed species in order to avoid inadvertent trampling or removal during survey, mapping, or excavation of cultural or paleontological resources.

9. Areas of viable habitat, in the vicinity of populations considered for prescribed burning, will be surveyed according to established protocols for new or undocumented populations of the species.

10. Lands being considered for exchange or disposal that contain suitable habitat for the species will be surveyed for undocumented populations, according to established protocols, prior to approval of such disposal. Lands supporting populations shall not be disposed of unless it is determined that the action will not threaten the survival and recovery of the species in accordance with the ESA and BLM Guidance and Policy Manual *6840 – Special Status Species Management*.

11. BLM will encourage the avoidance of key habitats during livestock herding and trailing activities on BLM administered lands. (Key habitats are those that are deemed necessary for the conservation of the species including, but not necessarily limited to, designated critical habitat and other occupied or unoccupied habitats considered important for the species survival and recovery as determined in coordination with the USFWS).

Barneby Reed-Mustard (*Schoenocrambe barnebyi*)

Conservation Measures

The following list of measures provides species-specific guidance intended to avoid, minimize, or reduce potential adverse impacts from implementation of BLM actions under the authority of current Utah BLM LUPs on the Berneby reed-mustard (*Schoencrambe barnebyi*). This list is not comprehensive. Additional conservation measures, or other modified versions of these measures, may be applied for any given BLM-authorized activity upon further analysis, review, coordination efforts, and/or appropriate levels of section 7 consultation with the USFWS.

1. Prior to surface disturbing activities in habitat for the species, presence/absence surveys of potentially affected areas will be conducted in accordance with established protocols.

2. Appropriate avoidance/protection/mitigation will be used to manage potential impacts of similar subsequent projects. These measures should include, but are not be limited to:

    - the stabilization of soils to minimize or avoid impacts related to soil erosion;

- marking/flagging of suitable and/or occupied habitat (including predetermined buffers) prior to development to avoid trampling by crew members or equipment during disturbance related activities; and
- require project proponents to conduct surveys and monitoring actions using BLM approved specialists to document population effects and individual impacts.

3. BLM shall continue to document new populations of each species as they are encountered.

4. To assist and support recovery efforts, BLM will minimize or avoid surface disturbances in habitats that support the species.

5. BLM will encourage and assist project proponents in development and design of their proposed actions in order to avoid direct disturbance to suitable habitat, populations or individuals where feasible. Designs should consider water flow, slope, appropriate buffer distances, possible fencing needs, and pre-activity flagging of sensitive areas that are planned for avoidance.

6. BLM will consider emergency OHV closure or additional restrictions to protect, conserve, and recover the species.

7. In areas where dispersed recreational uses are identified as threats to populations of the species, BLM will consider the development of new recreational facilities/opportunities that concentrate dispersed recreational use away from habitat, especially occupied habitat.

8. Cultural and paleontological survey/recovery technicians (i.e., archeologists and/or paleontologists), conducting work in the vicinity of known populations, will be educated in the identification of listed species in order to avoid inadvertent trampling or removal during survey, mapping, or excavation of cultural or paleontological resources.

9. Areas of viable habitat, in the vicinity of populations considered for prescribed burning, will be surveyed according to established protocols for new or undocumented populations of the species.

10. Lands being considered for exchange or disposal that contain suitable habitat for the species will be surveyed for undocumented populations, according to established protocols, prior to approval of such disposal. Lands supporting populations shall not be disposed of unless it is determined that the action will not threaten the survival and recovery of the species in accordance with the ESA and BLM Guidance and Policy Manual *6840 – Special Status Species Management*.

11. BLM will encourage the avoidance of key habitats during livestock herding and trailing activities on BLM administered lands. (Key habitats are those that are deemed necessary for the conservation of the species including, but not necessarily limited to, designated critical habitat and other occupied or unoccupied habitats considered important for the species survival and recovery as determined in coordination with the USFWS).

Bald Eagle (*Haliaeetus leucocephalus*)

Conservation Measures

The following conservation measures provide guidance for avoiding, minimizing, or reducing potential adverse impacts to the bald eagle from implementing actions authorized in this RMP. This list is not all-inclusive. Additional conservation measures, or other modified versions of these measures, may be

applied for any given BLM-authorized activity upon further analysis, review, coordination efforts, and/or appropriate levels of Section 7 consultation with USFWS:

1. Implement restrictions on all authorized (permitted) activities that may adversely impact bald eagles, their breeding habitat, roosting sites, or known winter concentration areas to avoid or minimize the impacts. Measures were adapted from guidance published in the Utah Field Office *Guidelines for Raptor Protection from Human and Land Use Disturbances* (USFWS 2002), and from coordination between BLM and USFWS. Measures include, but are not limited to seasonal and/or daily timing limitations and/or spatial buffers as follows:

    a. Temporary activities[4] or habitat alterations that could disturb nesting bald eagles would be restricted from January 1 to August 31 within 1 mile of nest sites. Exceptions would be considered where no nesting behavior is initiated prior to June 1.

    b. Temporary activities or habitat alterations that could disturb bald eagles would be restricted within one-half mile of known eagle winter roost areas from November 1 to March 31. In addition, require daily activities approved through subsequent consultation within these spatial buffers to start after 9 a.m. and terminate at least 1 hour before sunset to ensure that bald eagles using these roosts have the opportunity to vacate their roost in the morning and return undisturbed in the evening.

    c. Allow no permanent[5] structures within 1 mile of bald eagle nest sites or within one-half mile of bald eagle winter concentration areas (roosts).

    d. Where activities are authorized within breeding habitats or known winter concentration areas, monitoring efforts would document what, if any, impacts occur during project implementation and to what extent the species was affected. Utilize the monitoring results in designing and implementing future projects as part of the adaptive management process.

2. For all project-related survey and monitoring actions:

    a. Provide monitoring reports to the RFO within 15 days of completion of surveys or monitoring efforts. Reports must follow BLM-specified formats for written and automated databases.

    b. Any detection of bald eagle presence during survey or monitoring efforts to the authorized officer within 48 hours of detection.

3. Conduct appropriately timed surveys in suitable bald eagle nesting habitat or identified concentration areas in accordance with approved protocols prior to any activities that may disturb bald eagles. Surveys would only be conducted by BLM-approved individuals or personnel.

4. In coordination with cooperating agencies and/or partners (e.g., Utah Division of Wildlife Resources [UDWR] and USFWS), verify annual status (active versus inactive) of all known bald eagle nests and other identified eagle concentration areas on BLM-administered lands.

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[4] Temporary activities are defined as those that are completed prior to the start of the following raptor breeding season, leaving no permanent structures and resulting in no permanent habitat loss.

[5] Permanent activities continue for more than one breeding season and/or cause a loss of habitat or displace individuals through disturbance (e.g., creation of a permanent structure including but not limited to well pads, roads, pipelines, and electrical powerlines).

5. When project proposals that may affect threatened and endangered species are received, coordinate with USFWS at the earliest possible date so that USFWS can provide conservation measures needed to minimize or avoid impacts.

6. BLM-administered lands within 1 mile of bald eagle nests or identified communal winter roosts should be retained in federal ownership. If it is imperative that these lands be transferred out of public ownership, make every effort to include conservation easements in conveyance documents or seek voluntary conservation restrictions to protect the bald eagles and support their conservation.

7. Notify proponents of BLM-authorized actions that roadside carrion can attract foraging bald eagles and potentially increase the risk of vehicle collisions with eagles feeding on carrion. When carrion is found on roads, notify the appropriate agency for its removal.

8. Require powerlines to be constructed to standards and guidelines identified by the Avian Protection Plan (APP) Guidelines (USFWS and APLIC 2005).

9. Provide educational information to project proponents and the general public pertaining to the following topics:

    a. Appropriate vehicle speeds and the associated benefit of reduced vehicle collisions with wildlife

    b. Use of lead shot (particularly over water bodies)

    c. Use of lead fishing weights

    d. General ecological awareness of habitat disturbance.

10. Since bald eagles often prey upon aquatic species, periodically review water quality records (e.g., Utah Department of Environmental Quality [UDEQ], UDWR, and U.S. Geological Survey [USGS]) from monitoring stations at or near important bald eagle habitats (e.g., nests, roosts, and concentration areas) on BLM-administered lands for conditions that could adversely affect eagles or their prey. If water quality problems are identified, contact the appropriate jurisdictional entity to cooperatively monitor the condition and/or take corrective action.

Colorado Pikeminnow (*Ptychocheilus lucius*), Humpback Chub (*Gila cypha*), Bonytail Chub (*Gila elegans*), and Razorback Sucker (*Xyrauchen texanus*)

Conservation Measures

The following list of measures provides species-specific guidance intended to avoid, minimize, or reduce potential adverse impacts from implementation of BLM actions under the authority of current Utah BLM LUPs on the Colorado pikeminnow, Humpback chub, bonytail, and razorback sucker, herein referred to as the Colorado River fishes. This list is not comprehensive. Additional conservation measures, or other modified versions of these measures, may be applied for any given BLM-authorized activity upon further analysis, review, coordination efforts, and/or appropriate levels of section 7 consultation with the USFWS.

1. Monitoring of impacts of site-specific projects authorized by the BLM will result in the preparation of a report describing the progress of each site-specific project, including implementation of any associated reasonable and prudent measures or reasonable and prudent alternatives. This will be a requirement of project proponents and will be included as a condition of approval (COA) on future proposed actions that have been determined to have the potential for take. Reports will be submitted annually to the USFWS - Utah Field Office, beginning after the first full year of implementation of the project, and shall list and describe:

    - Any unforeseen direct or indirect adverse impacts that result from activities of each site-specific project;
    - Estimated levels of impact or water depletion, in relation to those described in the original project-level Consultation effort, in order to inform the Service of any intentions to reinitiate Section 7 Consultation; and
    - Results of annual, periodic monitoring which evaluates the effectiveness of any site-specific terms and conditions that are part of the formal Consultation process. This will include items such as an assessment of whether implementation of each site-specific project is consistent with that described in the BA, and whether the project has complied with terms and conditions.

2. The BLM shall notify the USFWS immediately of any unforeseen impacts detected during project implementation. Any implementation action that may be contributing to the introduction of toxic materials or other causes of fish mortality must be immediately stopped until the situation is remedied. If investigative monitoring efforts demonstrate that the source of fish mortality is not related to the authorized activity, the action may proceed only after notification of USFWS authorities.

3. Unoccupied, suitable habitat areas should be protected in order to preserve them for future management actions associated with the recovery of the Endangered Colorado River Fish, as well as approved reintroduction, or relocation efforts.

    - BLM will avoid impacts where feasible, to habitats considered most representative of prime suitable habitat for these species.
    - Surface disturbing activities will be restricted within ¼ mile of the channel centerline of the Colorado, Green, Duchesne, Price, White, and San Rafael Rivers
    - Surface disturbing activities proposed to occur within floodplains or riparian areas will be avoided unless there is no practical alternative or the development would enhance riparian/aquatic values. If activities must occur in these areas, construction will be designed to include mitigation efforts to maintain, restore, and/or improve riparian and aquatic conditions. If conditions could not be maintained, offsite mitigation strategies should be considered.

4. BLM will ensure project proponents are aware that designs must avoid as much direct disturbance to current populations and known habitats as is feasible. Designs should include:

    - protections against toxic spills into rivers and floodplains;
    - plans for sedimentation reduction;
    - minimization of riparian vegetation loss or degradation;
    - pre-activity flagging of critical areas for avoidance;
    - design of stream-crossings for adequate passage of fish; and
    - measures to avoid or minimize impacts on water quality at the 25-year frequency runoff

5. Prior to surface disturbing activities, specific principles will be considered to control erosion. These principles include:

    - Conduct long-range transportation planning for large areas to ensure that roads will serve future needs. This will result in less total surface disturbance.
    - Avoid, where possible, surface disturbance in areas with high erosion hazards.
    - Avoid mid-slope location of drill pads, headwalls at the source of tributary drainages, inner valley gorges, excessively wet slopes such as those near springs and avoid areas where large cuts and fills would be required.
    - Design and locate roads to minimize roadway drainage areas and to avoid modifying the natural drainage areas of small streams.

6. Where technically and economically feasible, project proponents will use directional drilling or multiple wells from a single pad to reduce surface disturbance and eliminate drilling in suitable riparian habitat. Ensure that such drilling does not intercept or degrade alluvial aquifers. Drilling will not occur within 100 year floodplains that contain listed fish species or their designated critical habitats.

7. The Utah Oil and Gas Pipeline Crossing Guidance (BLM National Science and Technology Center), or other applicable guidance, will be implemented for oil and gas pipeline river/stream crossings.

8. In areas adjacent to 100-year floodplains, particularly in systems prone to flash floods, BLM will analyze the risk for flash floods to impact facilities. Potential techniques may include the use of closed loop drilling and pipeline burial or suspension as necessary to minimize the potential for equipment damage and resultant leaks or spills.

9. Water depletions from any portion of the Upper Colorado River drainage basin above Lake Powell are considered to adversely affect and adversely modify the critical habitat of these endangered fish species. Section 7 consultation will be completed with the Service prior to any such water depletions.

10. Design stream-crossings for adequate passage of fish (if present), minimum impact on water quality, and at a minimum, a 25-year frequency run-off.

Mexican Spotted Owl (*Strix occidentalis lucida*)

Conservation Measures

The following list of measures provides species-specific guidance intended to avoid, minimize, or reduce potential adverse impacts from implementation of BLM actions under the authority of current Utah BLM LUPs on the Mexican spotted owl (*Strix occidentalis lucida*). This list is not comprehensive. Additional conservation measures, or other modified versions of these measures, may be applied for any given BLM-authorized activity upon further analysis, review, coordination efforts, and/or appropriate levels of section 7 consultation with the USFWS.

1. BLM will place restrictions on all authorized (permitted) activities that may adversely affect the Mexican spotted owl in identified PACs, breeding habitat, or designated critical habitat, to reduce the potential for adverse impacts to the species. Restrictions and procedures have been adapted

from guidance published in the Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (USFWS 2002b), as well as coordination between BLM and the Service. Measures include:

a. Surveys, according to USFWS protocol, will be required prior to any disturbance related activities that have been identified to have the potential to impact Mexican spotted owl, unless current species occupancy and distribution information is complete and available. All surveys must be conducted by USFWS certified individuals, and approved by the BLM authorized officer.

b. Assess habitat suitability for both nesting and foraging using accepted habitat models in conjunction with field reviews. Apply the appropriate conservation measures below if project activities occur within 0.5 mile of suitable owl habitat, dependent in part on if the action is temporary[6] or permanent[7]:

For all temporary actions that may impact owls or suitable habitat:

- If action occurs entirely outside of the owl breeding season, and leaves no permanent structure or permanent habitat disturbance, action can proceed without an occupancy survey.

- If action will occur during a breeding season, survey for owls prior to commencing activity. If owls are found, activity should be delayed until outside of the breeding season.

- Eliminate access routes created by a project through such means as raking out scars, revegetation, gating access points, etc. For all permanent actions that may impact owls or suitable habitat:

For all permanent actions that may impact owls or suitable habitat:

- Survey two consecutive years for owls according to established protocol prior to commencing of activity.
- If owls are found, no actions will occur within 0.5 mile of identified nest site.
- If nest site is unknown, no activity will occur within the designated Protected Activity Center (PAC).
- Avoid placing permanent structures within 0.5 mi of suitable habitat unless surveyed and not occupied.
- Reduce noise emissions (e.g., use hospital-grade mufflers) to 45 dBA at 0.5 mile from suitable habitat, including canyon rims (Delaney et al. 1997). Placement of permanent noise-generating facilities should be determined by a noise analysis to ensure noise does not encroach upon a 0.5 mile buffer for suitable habitat, including canyon rims.
- Limit disturbances to and within suitable owl habitat by staying on designated routes.
- Limit new access routes created by the project.

[6]Temporary activities are defined as those that are completed prior to the start of the following raptor breeding season, leaving no permanent structures and resulting in no permanent habitat loss.

[7] Permanent activities continue for more than one breeding season and/or cause a loss of owl habitat or displaces owls through disturbances, e.g., creation of a permanent structure including but not limited to well pads, roads, pipelines, electrical power line.

2. BLM will, as a condition of approval (COA) on any project proposed within identified PACs, designated critical habitat, or within spatial buffers for Mexican spotted owl nests (0.5 mile), ensure that project proponents are notified as to their responsibilities for rehabilitation of temporary access routes and other temporary surface disturbances, created by their project, according to individual BLM Field Office standards and procedures, or those determined in the project-specific Section 7 Consultation.

3. BLM will require monitoring of activities in designated critical habitat, identified PACs, or breeding habitats, wherein it has been determined that there is a potential for take. If any adverse impacts are observed to occur in a manner, or to an extent that was not considered in the project-specific Section 7 Consultation, then consultation must be reinitiated.

    - Monitoring results should document what, if any, impacts to individuals or habitat occur during project construction/implementation. In addition, monitoring should document successes or failures of any impact minimization, or mitigation measures. Monitoring results would be considered an opportunity for adaptive management, and as such, would be carried forward in the design and implementation of future projects.

4. For all survey and monitoring actions:
    - Reports must be provided to affected field offices within 15 days of completion of survey or monitoring efforts.
    - Report any detection of Mexican spotted owls during survey or monitoring to the authorized officer within 48 hours.

5. BLM will, in areas of designated critical habitat, ensure that any physical or biological actors (i.e., the primary constituent elements), as identified in determining and designating such habitat, remains intact during implementation of any BLM-authorized activity.

6. For all BLM actions that "*may adversely affect*" the primary constituent elements in any suitable Mexican spotted owl habitat, BLM will implement measures as appropriate to minimize habitat loss or fragmentation, including rehabilitation of access routes created by the project through such means as raking out scars, revegetation, gating access points, etc.

7. Where technically and economically feasible, use directional drilling from single drilling pads to reduce surface disturbance, and minimize or eliminate needing to drilling in canyon habitats suitable for Mexican spotted owl nesting.

8. Prior to surface disturbing activities in Mexican spotted owl PACs, breeding habitats, or designated critical habitat, specific principles should be considered to control erosion.

These principles include:

- Conduct long-range transportation planning for large areas to ensure that roads will serve future needs. This will result in less total surface disturbance.
- Avoid surface disturbance in areas with high erosion hazards to the greatest extent possible. Avoid mid-slope locations, headwalls at the source of tributary drainages, inner valley gorges, and excessively wet slopes such as those near springs. In addition, avoid areas where large cuts and fills would be required.
- Locate roads to minimize roadway drainage areas and to avoid modifying the natural drainage areas of small streams.

9. Project developments should be designed, and located to avoid direct or indirect loss or modification of Mexican spotted owl nesting and/or identified roosting habitats.

10. Water production associated with BLM authorized actions should be managed to ensure maintenance or enhancement of riparian habitats.

Utah Prairie Dog (*Cynomys parvidens*)

Conservation Measures

The following list of measures provides species-specific guidance intended to avoid, minimize, or reduce potential adverse impacts from implementation of BLM actions under the authority of current Utah BLM LUPs on the Utah prairie dog (*Cynomys parvidens*). This list is not comprehensive. Additional conservation measures, or other modified versions of these measures, may be applied for any given BLM-authorized activity upon further analysis, review, coordination efforts, and/or appropriate levels of section 7 consultation with the USFWS.

1. Surveys according to approved protocols and procedures will be required prior to surface disturbance unless species occupancy and distribution information is complete, current, and available. Surveys would be conducted by BLM-approved biologists. In the event species occurrence is verified, the project proponent may be required to modify operational plans, at the discretion of the authorized officer, to include additional, appropriate protection measures or practices for the minimization of impacts to the Utah prairie dog and its habitat.

2. BLM will restrict surface disturbing activities within 0.5 mile of active Utah prairie dog colonies when and where necessary, upon the recommendation of BLM FO staff biologists to BLM management and as necessary in coordination or consultation with USFWS.

3. No permanent surface disturbance or facility will be allowed within 0.5 mile of potentially suitable Utah prairie dog habitat, as identified and mapped by the Utah Division of Wildlife Resources or BLM, since 1976.

4. Unavoidable surface disturbing activities in Utah prairie dog habitat should be conducted between April 1 and September 30 (the period when prairie dogs are most likely to be found above ground). BLM projects will be designed to avoid direct disturbance to Utah prairie dog populations and habitat wherever possible. Designs should consider flow of water, slope, buffers, possible fencing, and pre-activity flagging of critical areas for avoidance.

5. Reclamation and restoration efforts in Utah prairie dog habitat will be conducted using native seed, unless otherwise specified in coordination with USFWS.

6. As funding allows, BLM should complete a comprehensive assessment locating and mapping OHV use areas that interface with Utah prairie dog populations. Comparison of GIS layers for Utah prairie dog populations and OHV use should give BLM personnel another tool to manage and/or minimize impacts from OHV use near known Utah prairie dog populations and habitat. Based on the information that is developed via GIS applications, appropriate actions should be taken to prevent OHV use in occupied territories.

7. BLM will consider emergency OHV closures or additional restrictions to protect, conserve, and recover the species.

8. Where technically and economically feasible, the use of directional drilling or drilling of multiple wells from a single pad will be required to reduce surface disturbance in Utah prairie dog habitat.

9. For existing facilities, BLM and facility operators, will consider if fencing infrastructure on well pads (e.g., drill pads, tank batteries, and compressors) would be needed to protect equipment from burrowing activities. In addition, BLM and project proponents should consider if future surface disturbing activities would be required at the site.

10. BLM will provide educational information for project proponents and the general public pertaining to appropriate vehicle speeds and the associated benefit of reduced vehicle collisions with wildlife, and to improve general ecological awareness of habitat disturbance.

11. Project related vehicle maintenance activities will be conducted in maintenance facilities. Should it become necessary to perform vehicle or equipment maintenance on-site, these activities will avoid identified Utah prairie dog colonies or within a 350-foot distance from colonies. Precautions shall be taken to ensure that contamination of maintenance sites by fuels, motor oils, grease, etc. does not occur and such materials are contained and properly disposed of off-site. Inadvertent spills of petroleum based or other toxic materials shall be cleaned up and removed immediately.

12. BLM will coordinate with interested private and governmental agencies and landowners to identify voluntary opportunities to modify current land stewardship practices that may have detrimental impacts on the Utah prairie dog and its habitat.

11. BLM-authorized equipment and vehicles planned for use within Utah prairie dog habitat will be cleaned to minimize the spread of noxious weeds or other undesirable vegetation types.

Southwestern Willow Flycatcher (*Empidonax trailii extimus*)

Conservation Measures

The following list of measures provides species-specific guidance intended to avoid, minimize, or reduce potential adverse impacts from implementation of BLM actions under the authority of current Utah BLM LUPs on the Southwestern willow flycatcher (*Empidonax traillii extimus*). This list is not comprehensive. Additional conservation measures, or other modified versions of these measures, may be applied for any given BLM-authorized activity upon further analysis, review, coordination efforts, and/or appropriate levels of section 7 consultation with the USFWS.

1. Surveys will be required prior to operations that *"may adversely affect"* the Southwestern willow flycatcher unless species occupancy data and distribution information is complete and available. Surveys will only be conducted by BLM-approved personnel. In the event species occurrence is verified, project proponents may be required to modify operational plans at the discretion of the authorized officer. Modifications may include appropriate measures for minimization of adverse effects to the Southwestern willow flycatcher and its habitat.

2. BLM will monitor and restrict, when and where necessary, authorized or casual use activities that *"may adversely affect"* the Southwestern willow flycatcher, including but not limited to, recreation, mining, and oil and gas activities. Monitoring results should be considered in the design and implementation of future projects.

3. To monitor the impacts of BLM-authorized projects determined *"likely to adversely affect"* the Southwestern willow flycatcher, BLM should prepare a short report describing progress, including success of implementation of all associated mitigation. Reports shall be submitted annually to the USFWS Utah Field Office by March 1st beginning one full year from date of implementation of the proposed action. The report shall list and describe the following items:

    - Any unforeseen adverse effects resulting from activities of each site-specific project (may also require reinitiation of formal Consultation);
    - When, and if, any level of anticipated incidental take is approached (as allowed by separate Incidental Take Statements of site-specific Formal Section 7 Consultation efforts);
    - When, or if, the level of anticipated take (as allowed by separate Incidental Take Statements from site-specific formal consultations) is exceeded; and • Results of annual, periodic monitoring which evaluate the effectiveness of the reasonable and prudent measures or terms and conditions of the site-specific Consultation.

4. BLM should avoid granting activity permits or authorizing development actions in Southwestern willow flycatcher habitat. Unoccupied potential habitat should be protected in order to preserve them for future management actions associated with the recovery of the Southwestern willow flycatcher.

5. BLM will ensure project design incorporates measures to avoid direct disturbance to populations and suitable habitats where possible. At a minimum, project designs should include consideration of water flows, slope, seasonal and spatial buffers, possible fencing, and pre-activity flagging of critical areas for avoidance.

6. The BLM will continue to address illegal and unauthorized OHV use and activity upon BLM administered lands. In order to protect, conserve, and recover the Southwestern willow flycatcher in areas of heavy unauthorized use, temporary closures, or use restrictions beyond those which are already in place, may be imposed. As funding allows, BLM should complete a comprehensive assessment of all OHV use areas that interface with Southwestern willow flycatcher populations. Comparison of Southwestern willow flycatcher populations and OHV use areas using GIS would give BLM personnel another tool to manage and/or minimize impacts.

7. All surface disturbing activities should be restricted within a 0.25 mile buffer from suitable riparian habitats and permanent surface disturbances should be avoided within 0.5 mile of suitable Southwestern willow flycatcher habitat.

    - Unavoidable ground disturbing activities in occupied Southwestern willow flycatcher habitat should only be conducted when preceded by current year survey, should only occur between August 16 and April 30 (the period when Southwestern willow flycatcher are not likely to be breeding), and should be monitored to ensure that adverse impacts to Southwestern willow flycatcher are minimized or avoided, and to document the success of project specific mitigation/protection measures. As monitoring is relatively undefined, project specific requirements must be identified.

8. BLM will properly consider nesting periods for Southwestern willow flycatcher when conducting horse gathering operations in the vicinity of habitat.

9. BLM will ensure that plans for water extraction and disposal are designed to avoid changes in the hydrologic regime that would likely result in loss or undue degradation of riparian habitat.

10. Native species will be preferred over non-native for revegetation of habitat in disturbed areas.

11. BLM will coordinate with other agencies and private landowners to identify voluntary opportunities to modify current land stewardship practices that may impact the Southwestern willow flycatcher and its habitats.

12. Limit disturbances to within suitable habitat by staying on designated routes.

13. Ground-disturbing activities will require monitoring throughout the duration of the project to ensure that adverse impacts to Southwestern willow flycatcher are avoided. Monitoring results should document what, if any, impacts to individuals or habitat occur during project construction/implementation. In addition, monitoring should document successes or failures of any impact minimization or mitigation measures. Monitoring results would be considered an opportunity for adaptive management and, as such, would be carried forward in the design and implementation of future projects.

14. Where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and eliminate drilling in Southwestern willow flycatcher habitat.

15. Habitat disturbances (i.e., organized recreational activities requiring special use permits, drilling activities, etc.) will be avoided within 0.25 mile of suitable Southwestern willow flycatcher habitat from May 1 to August 15.

16. Grazing allotments that contain habitat for the species will be managed with consideration for recommendations provided by the Southwestern Willow Flycatcher Recovery Plan, and other applicable research.

POTENTIAL BEST MANAGEMENT PRACTICES

Best management practices (BMP) are those land and resource management techniques determined to be the most effective and practical means of maximizing beneficial results and minimizing conflicts and adverse environmental impacts of management actions. BMPs could include, but are not limited to, structural and nonstructural controls, specific operations, and maintenance procedures. BMPs can be applied before, during, and after activities to reduce or eliminate adverse environmental impacts. BMPs are not one-size-fits-all solutions. BMPs should be matched and adapted through interdisciplinary analysis to determine which management practices would be necessary to meet the goals and objectives in the Resource Management Plan (RMP). The actual practices and mitigation measures that are best for a particular site are evaluated through the site-specific National Environmental Policy Act (NEPA) process and vary to accommodate unique, site-specific and local resource conditions.

BMPs described in this appendix are designed to assist in achieving the RMP objectives. These guidelines could apply, where appropriate, to all use authorizations, including projects initiated by the Bureau of Land Management (BLM). BMPs are dynamic, and should not be interpreted as specific direction at the same level as the RMP decisions. BMPs are selected and implemented as necessary, based on site-specific conditions, to meet resource objectives for specific management actions.

This appendix does not provide an exhaustive list of BMPs. Additional BMPs may be identified during an interdisciplinary process when evaluating site-specific management actions. Implementation and effectiveness of BMPs must be monitored to determine whether the practices are achieving RMP goals and objectives. Adjustments could be made as necessary to ensure RMP goals and objectives are met, as well as to conform with changes in BLM regulations, policy, direction, or new scientific information. BMPs may also be updated as new technology emerges. In addition, applicants can suggest alternate conditions that could accomplish the same result.

Because the management of environmental impacts is an ongoing process, continual refinement of BMP design is necessary. This process can be described in these five steps: (1) selection of design of a specific BMP; (2) application of the BMP; (3) monitoring; (4) evaluation; and (5) feedback. Data gathered through monitoring is evaluated and used to identify changes needed in BMP design or application or in the monitoring program.

BMPs have been developed and used by numerous energy companies and state and federal agencies throughout the nation. BLM and other agencies are continually gathering and developing BMPs and sharing them, allowing for the application of years of experience. Development and sharing of BMPs represents a commitment to the idea that smart planning and responsible follow-through manage and in some cases reduce impacts to resources, both now and in the future. The BMPs developed by other agencies could be considered in addition to those identified in this document. Other BMPs include those contained in the following documents and websites:

- *Utah's Forest Water Quality Guidelines: A Practical User's Guide for Landowners, Loggers, and Resource Managers* (State of Utah, Department of Natural Resources, Division of Forestry, Fire and State Lands). As of September 2007, an electronic version of this document was available at http://extension.usu.edu/forestry/Management/UtFWQGuide/Assets/PDFDocs/UFWQGBOO.PDF.
- *Coalbed Methane Best Management Practices: A Handbook – 2006 Update* (Western Governors' Association). As of September 2007, an electronic version of this document was available at www.westgov.org/wga/initiatives/coalbed/.

- *Low-Volume Roads Engineering Best Management Practices Field Guide* (U.S. Forest Service). As of September 2007, an electronic version of this document was available at www.blm.gov/bmp/field%20guide.htm.
- *Water-Road Interaction Technology Series Documents* (U.S. Forest Service). As of September 2007, electronic versions of these documents were available at www.stream.fs.fed.us/water-road/.
- *National Menu of Stormwater Best Management Practices* (U.S. Environmental Protection Agency). As of September 2007, electronic versions of these documents were available at http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm.
- *Technical Information Sheets: Specific and Detailed BMP Guidance* (Bureau of Land Management). As of September 2007, an electronic version of this document was available through hyperlinks at www.blm.gov/bmp/Technical_Information.htm.
- *Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development: The Gold Book* (Bureau of Land Management). As of September 2007, an electronic version of this document was available through hyperlinks at www.blm.gov/bmp/Technical_Information.htm.

In addition, this appendix contains conservation measures identified jointly by the BLM and the U.S. Fish and Wildlife Service (USFWS) as needed to protect specific threatened or endangered species. These conservation measures are targeted to specific species and must be considered and applied as appropriate.

Surface Disturbing Activities

- Evaluate areas subject to surface disturbance for the presence of cultural resources or values. This is usually accomplished through the completion of a cultural clearance. An on-the-ground inspection by a qualified archaeologist, historian, or paleontologist is required. In cases where cultural resources are found, the preferred response would be to modify the proposed action to avoid the cultural resource (avoidance). If avoidance is not possible, actions would be taken to preserve the data or value represented by the cultural resource (mitigation).
- Evaluate areas subject to surface disturbance for the presence of threatened, endangered, or candidate animal or plant species. This is usually accomplished through the completion of a biological clearance. An on-the-ground inspection by a qualified biologist is required. In cases where threatened, endangered, or candidate species are affected, the preferred response would be to modify the proposed action to avoid species or their habitat (avoidance). If avoidance of a threatened, endangered, or candidate species or its habitat is not possible, a Section 7 consultation with USFWS would be required, and a biological assessment would be prepared to recommend actions to protect the species or its habitat.
- Consider requiring special design and reclamation measures to protect scenic and natural landscape values. These may include transplanting trees and shrubs, mulching and fertilizing disturbed areas, use of low-profile permanent facilities, and painting to minimize visual contrasts. Surface disturbing activities may be moved to avoid sensitive areas or to reduce the visual effects of the proposal.
- Design above-ground facilities requiring painting to blend in with the surrounding environment.
- Implement reclamation concurrent with construction and site operations to the extent possible. Final reclamation actions shall be initiated within 6 months of the termination of operations unless otherwise approved in writing by the authorized officer.
- Ensure fill material is pushed into cut areas and up over back slopes. Depressions should not be left that would trap water or form ponds.

Mineral Exploration and Development

- Reduce impacts to wildlife and visual resources by applying the following, as appropriate:

  - Directional drilling of oil and gas wells
  - Drilling of multiple wells from a single pad
  - Closed drilling systems
  - Cluster development
  - Below-ground wellheads
  - Remote well monitoring
  - Piping of produced liquids to centralized tank batteries off site to reduce traffic to individual wells
  - Transportation planning (e.g., to reduce road density and traffic volumes)
  - Compensatory mitigation
  - Noise reduction techniques and designs
  - Installation of raptor anti-perch devices in Greater sage-grouse habitat
  - Monitoring of wildlife populations during drilling operations
  - Avoidance of human activity between 8 p.m. and 8 a.m. from March 1 through May 15 within one-quarter mile of the perimeter of occupied Greater sage-grouse leks
  - Onsite bioremediation of oil field wastes and spills
  - Removal of trash, junk, waste, and other materials not in current use.
- Reclaim all disturbed surface areas promptly, performing concurrent reclamation as necessary, and minimize the total amount of all surface disturbance.
- Ensure all surface soil is stripped prior to conducting operations, stockpiled, and reapplied during reclamation, regardless of soil quality. Minimize the length of time soil remains in stockpiles and the depth or thickness of stockpiles.
- Strip and separate soil surface horizons where feasible and reapply in proper sequence during reclamation.
- Establish vegetation cover on soil stockpiles that are to be in place longer than 1 year.
- Construct and rehabilitate temporary roads to minimize total surface disturbance, consistent with intended use.
- Consider temporary measures such as silt fences, straw bales, or mulching to trap sediment in sensitive areas until reclaimed areas are stabilized with vegetation.
- Reshape to the approximate original contour all areas to be permanently reclaimed, providing for proper surface drainage.

Road Design and Maintenance

- Keep access roads to a minimum and use to only when necessary.
- Design roads to minimize total disturbance, conform with topography, and minimize disruption of natural drainage patterns.
- Locate roads on stable terrain, such as ridgetops; natural benches; and flatter transitional slopes near ridges, valley bottoms, and moderate sideslopes, and away from slumps, slide-prone areas, concave slopes, clay beds, and where rock layers dip parallel to the slope. Locate roads on well-drained soil types; avoid wet areas.
- Construct roads for surface drainage by using outslopes, crowns, grade changes, drain dips, waterbars, and/or insloping to ditches as appropriate. Maintain drain dips, waterbars, road crown, insloping, and outsloping, as appropriate, during road maintenance. Grade roads only as necessary.
- Sloping the road base to the outside edge for surface drainage is normally recommended for local spurs or minor collector roads where low traffic volume and lower traffic speeds are anticipated. This is also recommended in situations where long intervals between maintenance will occur and where minimum excavation is wanted. Outsloping is not recommended on steep slopes. Sloping the road base to the inside edge is an acceptable practice on roads with steep sideslopes and

where the underlying soil formation is very rocky and not subject to appreciable erosion or failure.

- Crown and ditching is recommended for arterial and collector roads where traffic volume, speed, intensity, and user comfort are considerations. Recommended gradients range from 0 percent to 15 percent where crown and ditching may be applied, as long as adequate drainage away from the road surface and ditch lines is maintained.
- In soil types with a low sand component, construct roads when soils are dry and not frozen, if possible. When these types of soils or road surfaces become saturated to a depth of three inches, BLM-authorized activities should be limited or cease unless otherwise approved by the authorized officer.
- Retain vegetation between roads and streams to filter runoff caused by roads.
- Use culverts that pass, at a minimum, a 50-year storm event and/or have a minimum diameter of 13 inches for permanent stream crossings and a minimum diameter of 18 inches for road cross-drains.
- Strip and stockpile topsoil ahead of construction of new roads, if feasible. Reapply soil to cut and fill slopes prior to revegetation.
- Use existing roads whenever possible rather than constructing new road systems.

Right-of-Way and Utility Corridors

- Ensure rights-of-way (ROW) and utility corridors use areas adjoining or adjacent to previously disturbed areas whenever possible.
- Stabilize disturbed areas within road ROWs and utility corridors with vegetation practices designed to hold soil in place and minimize erosion. Reestablish vegetation cover to increase infiltration and provide additional protection from erosion.
- Construct sediment barriers when needed to slow runoff, allow deposition of sediment, and prevent transport from the site. Straining or filtration mechanisms may also be employed for the removal of sediment from runoff.

Noxious Weed Management

- To reduce the potential for the introduction of noxious weeds, clean off all equipment with pressure washing prior to operating on BLM lands. Removal of all dirt, grease, and plant parts that may carry noxious weed seeds or vegetative parts is required and may be accomplished with a pressure hose.
- Ensure all seed, hay, straw, mulch, or other vegetation material transported and used on public land weed free zones for site stability, rehabilitation, or project facilitation is free of noxious weeds and noxious weed seed as certified by a qualified federal, state, or county officer.

Reducing Impacts to Visual Resource Management Class II and Class III Areas

- Bury distribution powerlines and flow lines in or adjacent to access roads.
- Use repetition of elements of form, line, color, and texture to blend facilities with the surrounding landscape.
- Paint all above-ground structures not requiring safety coloration an environmental color two shades darker than the surrounding environment.
- Reclaim and recontour all disturbed areas, including access roads, to the original contour or a contour that blends with the surrounding topography.
- Avoid facility placement on steep slopes, ridge tops, and hilltops.

- Reclaim unused well pads within 1 year.

Developed Recreation

- Construct recreation sites and provide appropriate sanitation facilities to minimize impacts to resource values, maximize public health and safety, and minimize user conflicts related to approved activities and access within an area as appropriate.
- Use public education and/or physical barriers (such as rocks, posts, and vegetation) to direct or preclude uses and to minimize impacts to resource values.

Riparian/Wetland Areas

- Avoid locating roads, trails, and landings in wetlands.
- Locate, identify, and mark riparian management areas during design of projects that may cause adverse impacts to riparian management areas.
- Keep open water free from slash.
- Avoid equipment operation in areas of open water, seeps, and springs.
- Use low ground pressure equipment (floatation tires or tracked) as necessary to minimize rutting and compaction.

Water Developments

- Actual work in springs and stream beds will be done by hand where possible. If machinery is needed in these areas, it will be selected to minimize disturbance.
- After construction of spring head boxes, troughs, pipelines, and well sites, the areas will be cleaned up and refuse removed.
- Cuts, fills, and excavations will be dressed and seeded to blend with surroundings. Pipelines will be buried where possible.
- Original water sources will be protected, fenced if required, and an off-stream watering supply will be provided near the site.
- Size of storage tanks and troughs will be designed to accommodate expected needs of livestock and wildlife using each water source.
- Water will be left at the site for wildlife. Wells will be cased to prevent cave-ins and well sites will be fenced.
- Storage structures will be designed to provide water for wildlife. Drinking ramps will be installed and heights will not prohibit young wildlife from obtaining water.

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APPENDIX 15—BLM WIND ENERGY DEVELOPMENT PROGRAM POLICIES AND BEST MANAGEMENT PRACTICES
(FROM THE BLM'S WIND ENERGY DEVELOPMENT PROGRAM RECORD OF DECISION, 2005)

The Bureau of Land Management's (BLM) Wind Energy Development Program will establish a number of policies and best management practices (BMP), provided below, on developing wind energy resources on BLM-administered public lands. The policies and BMPs will apply to all wind energy development projects on BLM-administered public lands. The policies will address the administration of wind energy development activities, and the BMPs will identify required mitigation measures to be incorporated into project-specific Plans of Development (POD) and right-of-way (ROW) authorization stipulations. Additional mitigation measures will be applied to individual projects, in the form of stipulations in the ROW authorization as appropriate, to address site-specific and species-specific issues.

These policies and BMPs were formulated when the Final Wind Energy Programmatic Environmental Impact Statement (PEIS) (BLM 2005) was prepared. The PEIS included detailed, comprehensive analysis of the potential impacts of wind energy development and relevant mitigation measures; reviews of existing, relevant mitigation guidance; and reviews of comments received during scoping and public review of the Draft PEIS.

POLICIES

- BLM will not issue ROW authorizations for wind energy development on lands on which wind energy development is incompatible with specific resource values. Lands that will be excluded from wind energy site monitoring and testing and development include designated areas that are part of the National Landscape Conservation System (NLCS) (e.g., wilderness areas, wilderness study areas [WSA], national monuments, national conservation areas [NCA],[1] wild and scenic rivers, and national historic and scenic trails) and areas of critical environmental concern (ACEC).[2] Additional areas of land may be excluded from wind energy development based on findings of resource impacts that cannot be mitigated and/or that conflict with existing and planned multiple-use activities or land use plans.
- To the extent possible, wind energy projects shall be developed in a manner that will not prevent other land uses, including minerals extraction, livestock grazing, recreational use, and other ROW uses.
- Entities seeking to develop a wind energy project on BLM-administered lands shall consult with appropriate federal, state, and local agencies regarding specific projects as early in the planning process as appropriate to ensure that all potential construction, operation, and decommissioning issues and concerns are identified and adequately addressed.
- The BLM will initiate government-to-government consultation with Indian Tribal governments whose interests might be affected directly and substantially by activities on BLM-administered lands. This consultation will take place as early in the planning process as appropriate ensure that

[1] *Wind energy development is permitted in one NCA, the California Desert Conservation Area (CDCA), in accordance with the provisions of the* California Desert Conservation Area Plan 1980, as Amended *(BLM 1999).*

[2] *Although the Maximum Potential Development Scenario (MPDS) developed for this PEIS (Section 2.2.1 and Appendix B) did not exclude all of these lands at the screening level, they will be excluded from wind energy development.*

construction, operation, and decommissioning issues and concerns are identified and adequately addressed.

- Entities seeking to develop a wind energy project on BLM-administered lands, in conjunction with BLM Washington Office (WO) and Richfield Field Office (RFO) staff, will consult, as early in the planning process as appropriate, with the U.S. Department of Defense (DOD) regarding the location of wind power projects and turbine siting. This consultation will occur concurrently at both the Field Office (FO) level and the Pentagon/BLM WO level. An interagency protocol agreement is being developed to establish a consultation process and to identify the scope of issues for consultation. Lands withdrawn for military purposes are under the administrative jurisdiction of the DOD or a military service. The BLM does not issue wind energy authorizations for these lands.
- The BLM will consult with the U.S. Fish and Wildlife Service (USFWS) as required by Section 7 of the Endangered Species Act of 1973 (ESA). The specific consultation requirements will be determined on a project-by-project basis.
- The BLM will consult with the State Historic Preservation Office (SHPO) as required by Section 106 of the National Historic Preservation Act of 1966 (NHPA). The specific consultation requirements will be determined on a project-by-project basis. If programmatic Section 106 consultations have been conducted and are adequate to cover a proposed project, additional consultation may not be needed.
- Existing land use plans will be amended, as appropriate, to (1) adopt provisions of the BLM's Wind Energy Development Program, (2) identify land considered to be available for wind energy development, and (3) identify land that will not be available for wind energy development.
- The level of environmental analysis to be required under the National Environmental Policy Act (NEPA) for individual wind power projects will be determined at the FO level. For many projects, it may be determined that a tiered environmental assessment (EA) is appropriate in lieu of an environmental impact statement (EIS). To the extent that the PEIS addresses anticipated issues and concerns associated with an individual project, including potential cumulative impacts, the BLM will tier off of the decisions embedded in the PEIS and limit the scope of additional project-specific NEPA analyses. The site-specific NEPA analyses will include project site configuration analyses and micro-siting considerations, program requirements monitoring, and appropriate mitigation measures. In particular, the mitigation measures discussed in Chapter 5 of the PEIS may be consulted in determining site-specific requirements. Public involvement will be incorporated into all wind energy development projects to ensure that all concerns and issues are identified and adequately addressed. In general, the scope of the NEPA analyses will be limited to the proposed action on BLM-administered public lands. However, if access to proposed development on adjacent non-BLM-administered lands depends entirely on obtaining ROW access across BLM-administered public lands and no alternatives to that access exist, the NEPA analysis for the proposed ROW may need to assess the environmental effects from that proposed development. The BLM's analyses of ROW access projects may tier off of the PEIS to the extent that the proposed project falls within the scope of the PEIS analyses.
- Site-specific environmental analyses will tier from the PEIS and identify and assess any cumulative impacts that are beyond the scope of the cumulative impacts addressed in the PEIS.
- The Categorical Exclusion (CX) applicable to issuing short-term ROWs or land use authorizations may also apply to some site monitoring and testing activities. The relevant CX, established for the BLM in the Department of the Interior (DOI) Departmental Manual 516, Chapter 11, Sec. 11.5, E(19) (DOI 2004), encompasses "issuance of short-term (3 years or fewer) ROWs or land use authorizations for such uses as storage sites, apiary sites, and construction sites where the proposal includes rehabilitation to restore the land to its natural or original condition."
- The BLM will require financial bonds for all wind energy development projects on BLM-administered public lands to ensure compliance with the terms and conditions of the ROW authorization and the requirements of applicable regulatory requirements, including reclamation

costs. The amount of the required bond will be determined during the ROW authorization process based on site-specific and project-specific factors. The BLM may also require financial bonds for site monitoring and testing authorizations.

- Entities seeking to develop a wind energy project on BLM-administered public lands will develop a project-specific POD that incorporates all BMPs and, as appropriate, the requirements of other existing and relevant BLM mitigation guidance, including the BLM's interim offsite mitigation guidance (BLM 2005a). Additional mitigation measures will be incorporated into the POD and into the ROW authorization as project stipulations, as needed, to address site-specific and species-specific issues. The POD will include a site plan showing the locations of turbines, roads, power lines, other infrastructure, and other areas of short- and long-term disturbance.
- The BLM will incorporate management goals and objectives specific to habitat conservation for species of concern (e.g., sage grouse), as appropriate, into the POD for proposed wind energy projects.
- The BLM will consider the visual resource values of the public lands involved in proposed wind energy development projects, consistent with BLM Visual Resource Management (VRM) policies and guidance. The BLM will work with the ROW applicant to incorporate visual design considerations into the planning and design of the project to minimize potential visual impacts of the proposal and to meet the VRM objectives of the area.
- Operators of wind power facilities on BLM-administered public lands shall consult with the BLM and other appropriate federal, state, and local agencies regarding any planned upgrades or changes to the wind facility design or operation. Proposed changes of this nature may require additional environmental analysis and/or POD revision.
- The BLM's Wind Energy Development Program will incorporate adaptive management strategies to ensure that potential adverse impacts of wind energy development are avoided (if possible), minimized, or mitigated to acceptable levels. The programmatic policies and BMPs will be updated and revised as new data concerning the impacts of wind power projects become available. At the project level, operators will be required to develop monitoring programs to evaluate the environmental conditions at the site through all phases of development, to establish metrics against which monitoring observations can be measured, to identify potential mitigation measures, and to establish protocols for incorporating monitoring observations and additional mitigation measures into standard operating procedures and project-specific stipulations.

BEST MANAGEMENT PRACTICES

The BMPs will be adopted as required elements of project-specific PODs and/or as ROW authorization stipulations. They are categorized by development activity: site monitoring and testing, POD development, construction, operation, and decommissioning. The BMPs for POD development identify required elements of the POD needed to address potential impacts associated with subsequent phases of development.

Site Monitoring and Testing

- The area disturbed by installing meteorological towers (e.g., footprint) shall be kept to a minimum.
- Existing roads shall be used to the maximum extent feasible. If new roads are necessary, they shall be designed and constructed to the appropriate standard.
- Meteorological towers shall not be located in sensitive habitats or in areas where ecological resources known to be sensitive to human activities (e.g., sage grouse) are present. Installation of towers shall be scheduled to avoid disruption of wildlife reproductive activities or other important behaviors.

- Meteorological towers installed for site monitoring and testing shall be inspected periodically for structural integrity.

Plan of Development Preparation

General

- The BLM and operators shall contact appropriate agencies, property owners, and other stakeholders early in the planning process to identify potentially sensitive land uses and issues, administer rules that govern wind energy development locally, and address land use concerns specific to the region.
- Available information describing the environmental and sociocultural conditions in the vicinity of the proposed project shall be collected and reviewed as needed to predict potential impacts of the project.
- The Federal Aviation Administration (FAA)-required notice of proposed construction shall be made as early as possible to identify any air safety measures that would be required.
- To plan for efficient land use, necessary infrastructure requirements shall be consolidated wherever possible, and current transmission and market access shall be evaluated carefully.
- The project shall be planned to use existing roads and utility corridors to the maximum extent feasible, and to minimize the number and length/size of new roads, lay-down areas, and borrow areas.
- A monitoring program shall be developed to ensure that environmental conditions are monitored during the construction, operation, and decommissioning phases. The monitoring program requirements, including adaptive management strategies, shall be established at the project level to ensure that potential adverse impacts of wind energy development are mitigated. The monitoring program shall identify the monitoring requirements for each environmental resource present at the site, establish metrics against which monitoring observations can be measured, identify potential mitigation measures, and establish protocols for incorporating monitoring observations and additional mitigation measures into standard operating procedures and BMPs.
- "Good housekeeping" procedures shall be developed to ensure that during operation the site will be kept clean of debris, garbage, fugitive trash or waste, and graffiti; to prohibit scrap heaps and dumps; and to minimize storage yards.

Wildlife and Other Ecological Resources

- Operators shall review existing information on species and habitats in the vicinity of the project area to identify potential concerns.
- Operators shall conduct surveys for federal and/or state-protected species and other species of concern (including special status plant and animal species) within the project area and design the project to avoid (if possible), minimize, or mitigate impacts to these resources.
- Operators shall identify important, sensitive, or unique habitats in the vicinity of the project and design the project to avoid (if possible), minimize, or mitigate impacts to these habitats (e.g., locate the turbines, roads, and ancillary facilities in the least environmentally sensitive areas; e.g., away from riparian habitats, streams, wetlands, drainages, or critical wildlife habitats).
- The BLM will prohibit the disturbance of any population of federally listed plant species.
- Operators shall evaluate avian and bat use of the project area and design the project to minimize or mitigate the potential for bird and bat strikes (e.g., development shall not occur in riparian habitats and wetlands). Scientifically rigorous avian and bat use surveys shall be conducted; the amount and extent of ecological baseline data required shall be determined on a project basis.
- Turbines shall be configured to avoid landscape features known to attract raptors if site studies show that placing turbines there would pose a significant risk to raptors.

- Operators shall determine the presence of bat colonies and avoid placing turbines near known bat hibernation, breeding, and maternity/nursery colonies; in known migration corridors; or in known flight paths between colonies and feeding areas.
- Operators shall determine the presence of active raptor nests (e.g., raptor nests used during the breeding season). Measures to reduce raptor use at a project site (e.g., minimize road cuts, maintain either no vegetation or nonattractive plant species around the turbines) shall be considered.
- A habitat restoration plan shall be developed to avoid (if possible), minimize, or mitigate adverse impacts on vulnerable wildlife while maintaining or enhancing habitat values for other species. The plan shall identify revegetation, soil stabilization, and erosion reduction measures that shall be implemented to ensure all temporary use areas are restored. The plan shall require that restoration occur as soon as possible after completing the activities to reduce the amount of habitat converted at any one time and to speed up the recovery to natural habitats.
- Procedures shall be developed to mitigate potential impacts to special status species. Such measures could include avoidance, relocation of project facilities or lay-down areas, and/or relocation of biota.
- Facilities shall be designed to discourage their use as perching or nesting substrates by birds. For example, power lines and poles shall be configured to minimize raptor electrocutions and discourage raptor and raven nesting and perching.

Visual Resources

- The public shall be involved and informed about the visual site design elements of the proposed wind energy facilities. Possible approaches include conducting public forums for disseminating information, offering organized tours of operating wind developments, and using computer simulation and visualization techniques in public presentations.
- Turbine arrays and turbine design shall be integrated with the surrounding landscape. Design elements to be addressed include visual uniformity, use of tubular towers, proportion and color of turbines, nonreflective paints, and prohibition of commercial messages on turbines.
- Other site design elements shall be integrated with the surrounding landscape. Elements to address include minimizing the profile of the ancillary structures, burying cables, prohibiting commercial symbols, and using lighting. Regarding lighting, efforts shall be made to minimize the need for and amount of lighting on ancillary structures.

Roads

- An access road siting and management plan shall be prepared incorporating existing BLM standards regarding road design, construction, and maintenance, such as those described in the BLM 9113 Manual (BLM 1985) and the Surface Operating Standards for Oil and Gas Exploration and Development (RMRCC 1989) (e.g., the Gold Book).

Ground Transportation

- A transportation plan shall be developed, particularly for transporting turbine components, main assembly cranes, and other large pieces of equipment. The plan shall consider specific object sizes, weights, origin, destination, and unique handling requirements and shall evaluate alternative transportation approaches. In addition, the process to comply with unique state requirements and to obtain all necessary permits shall be clearly identified.
- A traffic management plan shall be prepared for the site access roads to ensure that no hazards would result from the increased truck traffic and that traffic flow would not be adversely impacted. This plan shall incorporate measures such as informational signs, flaggers when

equipment may result in blocked throughways, and traffic cones to identify any necessary changes in temporary lane configuration.

Noise

- Proponents of a wind energy development project shall take measurements to assess the existing background noise levels at a given site and compare them with the anticipated noise levels associated with the proposed project.

Noxious Weeds and Pesticides

- Operators shall develop a plan for controlling noxious weeds and invasive species, which could occur from new surface disturbance activities at the site. The plan shall address monitoring, educate personnel on weed identification, consider the manner in which weeds spread, and identify methods for treating infestations. The use of certified weed-free mulching shall be required. If trucks and construction equipment are arriving from locations with known invasive vegetation problems, a controlled inspection and cleaning area shall be established to visually inspect construction equipment arriving at the project area and to remove and collect seeds that may be adhering to tires and other equipment surfaces.
- If pesticides are used onsite, an integrated pest management plan shall be developed to ensure that applications would be conducted within the framework of BLM and DOI policies and entail only the use of Environmental Protection Agency (EPA)-registered pesticides. Pesticide use shall be limited to nonpersistent, immobile pesticides and shall be applied only in accordance with label and application permit directions and stipulations for terrestrial and aquatic applications.

Cultural/Historic Resources

- The BLM will consult with Indian Tribal governments early in the planning process to identify issues regarding the proposed wind energy development, including issues related to the presence of cultural properties, access rights, disruption of traditional cultural practices, and impacts to visual resources important to the tribe(s).
- The presence of archaeological sites and historic properties in the area of potential effect shall be determined based on a records search of recorded sites and properties in the area and/or, depending on the extent and reliability of existing information, an archaeological survey. Archaeological sites and historic properties present in the area of potential effect shall be reviewed to determine whether they meet the criteria of eligibility for listing on the National Register of Historic Places (NRHP).
- When any ROW application includes remnants of a National Historic Trail, is located within the viewshed of a National Historic Trail's designated centerline, or includes or is within the viewshed of a trail eligible for listing on the NRHP, the operator shall evaluate the potential visual impacts to the trail associated with the proposed project and identify appropriate mitigation measures for inclusion as stipulations in the POD.
- If cultural resources are present at the site, or if areas with a high potential to contain cultural material have been identified, a cultural resources management plan (CRMP) shall be developed. This plan shall address mitigation activities to be taken for cultural resources found at the site. Avoidance of the area is always the preferred mitigation option. Other mitigation options include archaeological survey and excavation (as warranted) and monitoring. If an area exhibits a high potential, but no artifacts were observed during an archaeological survey, monitoring by a qualified archaeologist could be required during all excavation and earthmoving in the high-potential area. A report shall be prepared documenting these activities. The CRMP also shall (1) establish a monitoring program, (2) identify measures to prevent potential looting/vandalism or

erosion impacts, and (3) address the education of workers and the public to make them aware of the consequences of unauthorized collection of artifacts and destruction of property on public land.

Paleontological Resources

- Operators shall determine whether paleontological resources exist in a project area based on the sedimentary context of the area, a records search for past paleontological finds in the area, and/or, depending on the extent of existing information, a paleontological survey.
- If paleontological resources are present at the site or if areas with a high potential to contain paleontological material have been identified, a paleontological resources management plan shall be developed. This plan shall include a mitigation plan for collecting the fossils; mitigation could include avoidance, removal of fossils, or monitoring. If an area exhibits a high potential but no fossils were observed during survey, monitoring by a qualified paleontologist could be required during all excavation and earthmoving in the sensitive area. A report shall be prepared documenting these activities. The paleontological resources management plan also shall (1) establish a monitoring program, (2) identify measures to prevent potential looting/vandalism or erosion impacts, and (3) address the education of workers and the public to make them aware of the consequences of unauthorized collection of fossils on public land.

Hazardous Materials and Waste Management

- Operators shall develop a hazardous materials management plan addressing storage, use, transportation, and disposal of each hazardous material anticipated to be used at the site. The plan shall identify all hazardous materials that would be used, stored, or transported at the site. It shall establish inspection procedures, storage requirements, storage quantity limits, inventory control, nonhazardous product substitutes, and disposition of excess materials. The plan shall also identify requirements for notices to federal and local emergency response authorities and include emergency response plans.
- Operators shall develop a waste management plan identifying the waste streams that are expected to be generated at the site. The plan shall address hazardous waste determination procedures, waste storage locations, waste-specific management and disposal requirements, inspection procedures, and waste minimization procedures. It shall also address all solid and liquid wastes that may be generated at the site.
- Operators shall develop a spill prevention and response plan identifying where hazardous materials and wastes are stored on site, determining spill prevention measures to be implemented, implementing training requirements, defining appropriate spill response actions for each material or waste, identifying the locations of spill response kits on site, using a procedure for ensuring that the spill response kits are adequately stocked at all times, and executing procedures for making timely notifications to authorities.

Storm Water

- Operators shall develop a storm water management plan for the site to ensure compliance with applicable regulations and prevent offsite migration of contaminated storm water or increased soil erosion.

Human Health and Safety

- A safety assessment shall be conducted to describe potential safety issues and the means that would be taken to mitigate them. These issues include site access, construction, safe work

practices, security, heavy equipment transportation, traffic management, emergency procedures, and fire control.

- A health and safety program shall be developed to protect both workers and the general public during construction, operation, and decommissioning of a wind energy project. Regarding occupational health and safety, the program shall identify all applicable federal and state occupational safety standards; establish safe work practices for each task (e.g., requirements for personal protective equipment and safety harnesses; Occupational Safety and Health Administration [OSHA] standard practices for using explosives and blasting agents; and measures for reducing occupational electric and magnetic fields [EMF] exposures); establish fire safety evacuation procedures; and define safety performance standards (e.g., electrical system standards and lightning protection standards). The program shall include a training program to identify hazard training requirements for workers for each task and establish procedures for providing required training to all workers. Documentation of training and a mechanism for reporting serious accidents to appropriate agencies shall be established.
- Regarding public health and safety, the health and safety program shall establish a safety zone or setback for wind turbine generators from residences and occupied buildings, roads, ROWs, and other public access areas that is sufficient to prevent accidents resulting from operating wind turbine generators. The program shall identify requirements for temporary fencing around staging areas, storage yards, and excavations during construction or decommissioning activities. It shall also identify measures to be taken during the operation phase to limit public access to hazardous facilities (e.g., permanent fencing would be installed only around electrical substations, and turbine tower access doors would be locked).
- Operators shall consult with local planning authorities regarding increased traffic during the construction phase. This consultation shall include an assessment of the number of vehicles per day, their size, and type. Specific issues of concern (e.g., location of school bus routes and stops) shall be identified and addressed in the traffic management plan.
- If operating the wind turbines is expected to cause significant adverse impacts to nearby residences and occupied buildings from shadow flicker, low-frequency sound, or EMF, site-specific recommendations for addressing these concerns shall be incorporated into the project design (e.g., establishing a sufficient setback from turbines).
- The project shall be planned to minimize electromagnetic interference (EMI) (e.g., impacts to radar, microwave, television, and radio transmissions) and comply with Federal Communications Commission (FCC) regulations. Signal strength studies shall be conducted when proposed locations have the potential to impact transmissions. Potential interference with public safety communication systems (e.g., radio traffic related to emergency activities) shall be avoided.
- The project shall be planned to comply with FAA regulations, including lighting regulations, and to avoid potential safety issues associated with proximity to airports, military bases or training areas, or landing strips.
- Operators shall develop a fire management strategy to implement measures to minimize the potential for a human-caused fire.

Construction

General

- All control and mitigation measures established for the project in the POD and the resource-specific management plans that are part of the POD shall be maintained and implemented throughout the construction phase, as appropriate.
- The area disturbed by construction and operation of a wind energy development project (e.g., footprint) shall be kept to a minimum.

- The number and size/length of roads, temporary fences, lay-down areas, and borrow areas shall be minimized.
- Topsoil from all excavations and construction activities shall be salvaged and reapplied during reclamation.
- All areas of disturbed soil shall be reclaimed using weed-free native grasses, forbs, and shrubs. Reclamation activities shall be undertaken as early as possible on disturbed areas.
- All electrical collector lines shall be buried in a manner that minimizes additional surface disturbance (e.g., along roads or other paths of surface disturbance). Overhead lines may be used in cases where burying lines would result in further habitat disturbance.
- Operators shall identify unstable slopes and local factors that can induce slope instability (such as groundwater conditions, precipitation, earthquake activities, slope angles, and the dip angles of geologic strata). Operators also shall avoid creating excessive slopes during excavation and blasting operations. Special construction techniques shall be used, where applicable, in areas of steep slopes, erodible soil, and stream channel crossings.
- Erosion controls that comply with county, state, and federal standards shall be applied. Practices such as jute netting, silt fences, and check dams shall be applied near disturbed areas.

Wildlife

- Guy wires on permanent meteorological towers shall be avoided; however, they may be necessary on temporary meteorological towers installed during site monitoring and testing.
- In accordance with the habitat restoration plan, restoration shall be undertaken as soon as possible after completing construction activities to reduce the amount of habitat converted at any one time and to speed up the recovery to natural habitats.
- All construction employees shall be instructed to avoid harassment and disturbance of wildlife, especially during reproductive (e.g., courtship and nesting) seasons. In addition, pets shall not be permitted onsite during construction.

Visual Resources

- Operators shall reduce visual impacts during construction by minimizing areas of surface disturbance, controlling erosion, using dust suppression techniques, and restoring exposed soils as closely as possible to their original contour and vegetation.

Roads

- Existing roads shall be used, but only if in safe and environmentally sound locations. If new roads are necessary, they shall be designed and constructed to the appropriate standard and be no higher than necessary to accommodate their intended functions (e.g., traffic volume and weight of vehicles). Excessive grades on roads, road embankments, ditches, and drainages shall be avoided, especially in areas with erodible soils. Special construction techniques shall be used, where applicable. Abandoned roads and roads that are no longer needed shall be recontoured and revegetated.
- Access roads and onsite roads shall be surfaced with aggregate materials wherever appropriate.
- Access roads shall be located to follow natural contours and minimize side hill cuts.
- Roads shall be located away from drainage bottoms and avoid wetlands, if practicable.
- Roads shall be designed so that changes to surface water runoff are avoided and erosion is not initiated.
- Access roads shall be located to minimize stream crossings. All structures crossing streams shall be located and constructed so that they do not decrease channel stability or increase water velocity. Operators shall obtain all applicable federal and state permits.

- Existing drainage systems shall not be altered, especially in sensitive areas such as erodible soils or steep slopes. Potential soil erosion shall be controlled at culvert outlets with appropriate structures. Catch basins, roadway ditches, and culverts shall be cleaned and maintained regularly.

Ground Transportation

- Project personnel and contractors shall be instructed and required to adhere to speed limits commensurate with road types, traffic volumes, vehicle types, and site-specific conditions. This adherence ensures safe and efficient traffic flow and reduces wildlife collisions and disturbance and airborne dust.
- Traffic shall be restricted to the roads developed for the project. Use of other unimproved roads shall be restricted to emergency situations.
- Signs shall be placed along construction roads to identify speed limits, travel restrictions, and other standard traffic control information. To minimize impacts on local commuters, consideration shall be given to limiting construction vehicles traveling on public roadways during the morning and late afternoon commute times.

Air Emissions

- Dust abatement techniques shall be used on unpaved, unvegetated surfaces to minimize airborne dust.
- Speed limits (e.g., 25 mph [40 km/h]) shall be posted and enforced to reduce airborne fugitive dust.
- Construction materials and stockpiled soils shall be covered if they are a source of fugitive dust.
- Dust abatement techniques shall be used before and during surface clearing, excavation, or blasting activities.

Excavation and Blasting Activities

- Operators shall gain a clear understanding of the local hydrogeology. Areas of groundwater discharge and recharge and their potential relationships with surface water bodies shall be identified.
- Operators shall avoid creating hydrologic conduits between two aquifers during foundation excavation and other activities.
- Foundations and trenches shall be backfilled with originally excavated material as much as possible. Excess excavation materials shall be disposed of only in approved areas or, if suitable, stockpiled for use in reclamation activities.
- Borrow material shall be obtained only from authorized and permitted sites. Existing sites shall be used in preference to new sites.
- Explosives shall be used only within specified times and at specified distances from sensitive wildlife or streams and lakes, as established by the BLM or other federal and state agencies.

Noise

- Noisy construction activities (including blasting) shall be limited to the least noise-sensitive times of day (e.g., between 7:00 a.m. and 10:00 p.m.) and shall be restricted to weekdays only.
- All equipment shall have sound-control devices no less effective than those provided on the original equipment. All construction equipment used shall be adequately muffled and maintained.
- All stationary construction equipment (e.g., compressors and generators) shall be located as far as practicable from nearby residences.

- If blasting or other noisy activities are required during the construction period, nearby residents shall be notified in advance.

Cultural and Paleontological Resources

- Unexpected discovery of cultural or paleontological resources during construction shall be brought to the attention of the responsible BLM Authorized Officer immediately. Work shall be halted in the vicinity of the find to avoid further disturbance to the resources while they are being evaluated and appropriate mitigation measures are being developed.

Hazardous Materials and Waste Management

- Secondary containment shall be provided for all onsite hazardous materials and waste storage, including fuel. In particular, fuel storage (for construction vehicles and equipment) shall be a temporary activity occurring only for as long as needed to support construction activities.
- Wastes shall be containerized properly and removed periodically for disposal at appropriate offsite permitted disposal facilities.
- In the event of an accidental release to the environment, the operator shall document the event, including a root cause analysis, appropriate corrective actions taken, and a characterization of the resulting environmental or health and safety impacts. Documentation of the event shall be provided to the BLM Authorized Officer and other federal and state agencies, as required.
- Any wastewater generated in association with temporary, portable sanitary facilities shall be removed periodically by a licensed hauler and introduced into an existing municipal sewage treatment facility. Temporary, portable sanitary facilities provided for construction crews shall be adequate to support expected onsite personnel and shall be removed once construction activities are completed.

Public Health and Safety

- Temporary fencing shall be installed around staging areas, storage yards, and excavations during construction to limit public access.

Operation

General

- All control and mitigation measures established for the project in the POD and the resource-specific management plans that are part of the POD shall be maintained and implemented throughout the operational phase, as appropriate. These control and mitigation measures shall be reviewed and revised, as needed, to address changing conditions or requirements at the site throughout the operational phase. This adaptive management approach would help ensure that impacts from operations are kept to a minimum.
- Inoperative turbines shall be repaired, replaced, or removed in a timely manner. Requirements to do so shall be incorporated into the due diligence provisions of the ROW authorization. Operators will be required to demonstrate due diligence in the repair, replacement, or removal of turbines; failure to do so could result in terminating ROW authorization.

Wildlife

- Employees, contractors, and site visitors shall be instructed to avoid harassment and disturbance of wildlife, especially during reproductive (e.g., courtship and nesting) seasons. In addition, any pets shall be controlled to avoid harassment and disturbance of wildlife.
- Observations of potential wildlife problems, including wildlife mortality, shall be reported to the BLM Authorized Officer immediately.

Ground Transportation

- Ongoing ground transportation planning shall be conducted to evaluate road use, minimize traffic volume, and ensure that roads are maintained adequately to minimize associated impacts.

Monitoring Program

- Site monitoring protocols defined in the POD shall be implemented. These protocols will incorporate monitoring program observations and additional mitigation measures into standard operating procedures and BMPs to minimize future environmental impacts.
- Results of monitoring program efforts shall be provided to the BLM Authorized Officer.

Public Health and Safety

- Permanent fencing shall be installed and maintained around electrical substations, and turbine tower access doors shall be locked to limit public access.
- In the event an installed wind energy development project results in EMI, the operator shall work with the owner of the impacted communications system to resolve the problem. Additional warning information may also need to be conveyed to aircraft with onboard radar systems so that echoes from wind turbines can be quickly recognized.

Decommissioning

General

- Prior to terminating the ROW authorization, the BLM shall develop and approve a decommissioning plan. The decommissioning plan shall include a site reclamation plan and monitoring program.
- All management plans, BMPs, and stipulations developed for the construction phase shall be applied to similar activities during the decommissioning phase.
- All turbines and ancillary structures shall be removed from the site.
- Topsoil from all decommissioning activities shall be salvaged and reapplied during final reclamation.
- All areas of disturbed soil shall be reclaimed using weed-free native shrubs, grasses, and forbs.
- The vegetation cover, composition, and diversity shall be restored to values commensurate with the ecological setting.

REFERENCES

Bureau of Land Management (BLM). 1985. BLM Manual Section 9113 – Roads.

Bureau of Land Management (BLM). 2005. Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States. June 2005.

Department of the Interior (DOI). 2004. Departmental Manual Part 516: National Environmental Policy Act of 1969; Chapter 11: Managing the NEPA Process--Bureau of Land Management.

Bureau of Land Management and Forest Service Rocky Mountain Regional Coordinating Committee (RMRCC). 1989. Surface Operating Standards for Oil and Gas Exploration and Development "Gold Book". January 1989. http://www.blm.gov/nhp/300/wo310/oandg/docs/GoldBook.pdf.

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APPENDIX 16—SUMMARY OF MANAGEMENT OF NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS FOR THE RICHFIELD FIELD OFFICE PROPOSED RMP/FINAL EIS

Appendix 16 summarizes the management decisions for non-Wilderness Study Area (WSA) lands with wilderness characteristics to be included in the Richfield Field Office (RFO) Proposed Resource Management Plan/Final Environmental Impact Statement (PRMP/FEIS). It also includes a discussion of the interdisciplinary process that occurred before these decisions were made.

Twenty-nine non-WSA lands with wilderness characteristic units were proposed for wilderness characteristic management and analyzed within Alternative D of the PRMP/FEIS. (For more information about these 29 units, see Chapter 3 of the Draft RMP/EIS.) BLM staff reviewed the units and weighed the considerations of the wilderness characteristic values and the ability to manage and protect these values. Other resources and resource uses were considered, as were existing conflicts between resource uses. Proposed decisions within the RFO Proposed RMP that would provide alternative ways of protecting the wilderness characteristic values were also reviewed. Based on that review, portions of 12 of the 29 non-WSA lands with wilderness characteristics units (78,600 acres) would be managed for wilderness characteristic values and would be carried forward in the RFO PRMP/FEIS (Table A16-1).

Table A16-1. Non-WSA Lands with Wilderness Characteristics

Non-WSA Lands With Wilderness Characteristics Unit	County	Acres Found to Possess Wilderness Characteristics	Acres Proposed for Special Management of Wilderness Characteristic Values
Dirty Devil/French Spring	Garfield Wayne	133,100	6,100
Dogwater Creek	Garfield	3,500	3,100
Horseshoe Canyon South	Wayne	20,600	12,200
Jones Bench	Sevier	3,300	2,600
Labyrinth Canyon	Wayne	12,300	2,800
Little Rockies	Garfield	23,200	9,500
Mount Ellen-Blue Hills	Garfield Wayne	49,800	3,900
Mount Pennell	Garfield	65,600	4,700
Notom Bench	Wayne	8,000	8,200
Ragged Mountain	Garfield	25,900	7,900
Red Desert	Wayne	40,700	8,900
Wild Horse Mesa	Wayne	49,700	8,700
Total		**435,700**	**78,600**

PROPOSED MANAGEMENT PRESCRIPTIONS FOR NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS CARRIED FORWARD IN THE PROPOSED RMP/FINAL EIS

The following management prescriptions would apply to the wilderness characteristics areas carried forward in the PRMP/FEIS. These prescriptions were developed to protect wilderness values, while allowing other resource uses as appropriate. These management prescriptions also would be consistent with other BLM Field Offices in southern Utah and with the Price Field Office (PFO), which shares management of one of the non-WSA units.

- Designate as Visual Resource Management (VRM) Class II
- Limit motorized use to designated routes
- Retain lands in public ownership
- Designate as an Avoidance Area for rights-of-way (ROW)
- Designate leasing category as no surface occupancy (NSO), no exceptions, waivers, or modifications
- Close to mineral material sales
- Designate as unavailable for further consideration for coal leasing
- Continue maintenance and use of existing facilities
- Prohibit private or commercial woodland harvest or seed collection
- Healthy Lands Initiative projects could be considered where they improve the overall goals and objectives for managing the wilderness characteristics of these areas.

Non-WSA Lands With Wilderness Characteristics Units to be Managed for Wilderness Characteristic Values

Dirty Devil/French Spring

There are 6,100 acres within the Dirty Devil/French Spring Non-WSA Lands with Wilderness Characteristics unit, directly adjacent to the Dirty Devil WSA, which would be managed for wilderness characteristic values.

The Dirty Devil/French Spring unit consists of many sub-parcels adjacent to the Dirty Devil and Happy Canyon/French Spring WSAs. The non-WSA parcels chosen for wilderness characteristics management are located on the northern portion of the unit between the WSA and motorized ways used for accessing the area. Management for wilderness characteristics would complement the WSA and overall management of the area. The routes provide not only easily recognizable boundaries for the sub-parcels but also extra protection from intrusions into the WSA.

Manageability issues and resource conflicts were identified within the remainder of the unit, which would make these areas more suitable for multiple-use management. Routes and state/private lands within the sub-parcels further segment areas and result in some areas that are not contiguous to the WSA. Some of the sub-parcels include a higher density of range developments and routes (150 miles of inventoried routes occur within this unit). Types of disturbances include allotment and riparian protection fencing, livestock troughs, water tanks, catchments, reservoirs, corrals, trend plots, seismic disturbances, overlooks, trailheads, dispersed camping locations, and other soil disturbances near routes (possibly related to road maintenance). Continued use and maintenance of these existing resources could detract from the wilderness experience expected by visitors, creating conflict between users. Portions of the unit, which include active mineral leases (23 percent) and claims, have been identified as having high potential

for minerals. New uranium drilling projects have been occurring in the southern portion of the area (Poison Springs) since 2007. Twenty-four state sections and one private parcel would be contained within the non-WSA lands with wilderness characteristics unit or become isolated between the WSA and the unit.

Decisions proposed in the Proposed RMP for other resources or values would provide additional protection for the portions of the Dirty Devil/French Spring unit managed for multiple use. There would be 38,700 acres designated as VRM Class II. This designation would retain the characteristic landscape, allowing for only minor changes to the landform and vegetation. Motorized use within the unit would be limited to designated routes on 105,600 acres and closed on the remaining 27,500 acres. There were 61,392 acres of this unit identified for avoidance or exclusion of ROWs. Oil and Gas Leasing would be allowed with minor constraints on 47,600 acres, restricted to NSO on 56,500 acres, and there would be no acres closed within the unit. Management actions pertaining to the Canyonlands Herd Management Area (HMA) would continue to present opportunities for viewing wild burros, which is often associated with primitive recreation experiences.

Dogwater Creek

There are 3,100 acres of the Dogwater Creek unit (Southern parcel), adjacent to Capitol Reef National Park (CRNP), which would be managed for wilderness characteristic values. The access route to the Sand Cove Reservoir would be designated as a motorized route within the unit and future maintenance of the reservoir authorized.

The Dogwater Creek unit consists of two separate parcels, which are adjacent to CRNP lands administratively endorsed for wilderness. The southern parcel was chosen for management of wilderness characteristics. The only developments identified in this unit are a reservoir with access via a two-track route. These developments, which were not noticed during the inventory phase, would continue to be unnoticeable within the unit, Management for wilderness characteristics would complement the management that the National Park Service (NPS) proposed.

Manageability issues and resource conflicts with private lands were identified within the remainder of the unit (northern parcel), which would make this area more suitable for multiple-use management. The parcel is bordered on three sides by private property, and access to the parcel is controlled by the private property owner. BLM would have no control over future disturbances on the private property and its effects to the wilderness characteristic values.

Decisions proposed in the Proposed RMP for other resources or values would provide additional protection for the portions of the Dogwater Creek unit managed for multiple use. The area would be designated as VRM Class II. Motorized use within the unit would be limited to designated routes. Oil and Gas Leasing would be allowed with minor constraints.

Horseshoe Canyon South

There are 12,200 acres of this unit, adjacent to Horseshoe Canyon South WSA, Horseshoe Canyon NPS and/or Glen Canyon National Recreation Area (NRA) units that would be managed for wilderness characteristic values. The three trailhead access routes for the Horseshoe Canyon NPS unit would be designated for motorized use, and the facilities at the main trailhead would continue to be managed through a general agreement between the BLM and NPS.

The Horseshoe Canyon unit consists of sub-parcels around the perimeter of the Horseshoe Canyon WSA. The parcels chosen for management of wilderness characteristics are located in the northern portion of the

unit. These parcels are also adjacent to NPS areas administratively endorsed for wilderness (Horseshoe Canyon Unit of Canyonlands NP and Glen Canyon NRA). Management for wilderness characteristics would complement the overall WSA and NPS management of this northern portion of the unit. The trailhead access routes and county maintained roads provide easily recognizable boundaries for the parcels.

Manageability issues and resource conflicts were identified within the remainder of the unit, which would make these areas more suitable for multiple-use management. Potential conflicts present include access to state land, Section 4 structures at Granary Spring, fencing, and a reservoir. Routes and state lands within the sub-parcels further segment areas and result in some areas that are not contiguous to the WSA. Western portions of the unit are adjacent to a County B road, pertinent to access to the Hans Flat Ranger Station and NPS lands. This road has become entrenched from decades of grading. Future road maintenance may include crowning and providing for proper drainage to prevent further entrenching. Wilderness characteristics management directly adjacent to the road may result in conflicts with those maintenance needs. The sub-parcels occurring between the county maintained road and the WSA also provide opportunities for dispersed camping and staging for hiking, "canyoneering," and horse use trips into the WSA. As interest and use of the area increases, use of these undeveloped sites will become more important for providing for camping and staging areas a safe distance from the main county road.

Decisions proposed in the Proposed RMP for other resources or values would provide additional protection for the portions of the Horseshoe Canyon South unit managed for multiple use. There would be 3,600 acres designated as VRM Class II. Motorized use within the unit would be limited to designated routes on 20,500 acres and closed on the remaining 100 acres. There were 3,606 acres of this unit identified for avoidance or exclusion of ROWs. Oil and Gas Leasing would be allowed with minor constraints on 7,100 acres and restricted to NSO on 13,500 acres of the unit. Management actions pertaining to the Canyonlands HMA would continue to provide opportunities for viewing of wild burros, which is often associated with primitive recreation experiences.

Jones Bench

There are 2,600 acres of the Jones Bench unit, adjacent to CRNP, which would be managed for wilderness characteristic values.

The Jones Bench unit shares its southern boundary with CRNP lands administratively endorsed for wilderness. A cherry-stemmed route providing access to CRNP occurs in the western portion of the unit and the Rock Spring pipeline bisects the northeastern portion of the unit. The majority of the unit, which occurs between these disturbances, is adjacent to CRNP and management for wilderness characteristics would complement the management proposed by the NPS.

The remainder of the unit would be managed for multiple use, including continued access to Forest Service lands to the west of the unit.

Decisions proposed in the Proposed RMP for other resources or values would provide additional protection for the portions of the Jones Bench unit managed for multiple use. Motorized use within the unit would be limited to designated routes. Oil and Gas Leasing with minor constraints would apply to 600 acres and restricted to NSO on 2,500 acres of the unit.

Labyrinth Canyon

There are 2,800 acres of the Labyrinth Canyon unit within the RFO, adjacent to Horseshoe Canyon North WSA and the Horseshoe Canyon NPS unit, which would be managed for wilderness characteristic values.

The Labyrinth Canyon unit consists of sub-parcels around the perimeter of the Horseshoe Canyon North WSA. The parcel chosen for management of wilderness characteristics is located in the southern portion of the unit and is adjacent to the WSA and/or the Horseshoe Canyon Unit of Canyonlands NP, which is administratively endorsed for wilderness. Management for wilderness characteristics would complement the overall WSA and NPS management of this portion of the unit.

The two remaining sub-parcels located within the RFO extend into BLM PFO administered lands. Management considerations were made for consistency with management decisions of the PFO. Establishing easily recognizable boundaries along the Emery/Wayne County line would be unfeasible and lead to confusion and conflict with wilderness characteristics management along the county line. Other considerations weighed for these sub-parcels included the size of the remaining western sub-parcel and high mineral potential within the eastern sub-parcel.

Decisions proposed in the Proposed RMP for other resources or values would provide additional protection for the portions of the Labyrinth Canyon unit managed under multiple use. Motorized use within the unit would be limited to designated routes. Oil and Gas Leasing would be allowed with minor constraints.

Little Rockies

There are 9,500 acres within the Little Rockies unit, directly adjacent to the Little Rockies WSA, which would be managed for wilderness characteristic values.

The Little Rockies unit consists of four separate parcels adjacent to the Little Rockies WSA. The areas chosen for management of wilderness characteristics are in the northern, second, and southern parcels of the unit. Boundaries have been adjusted to exclude intrusions, except for two routes, one north of Maidenwater Canyon and one originating from the southern boundary, that would be designated for motorized use to allow continued access for grazing management. Management for wilderness characteristics would complement the WSA and overall management of the area.

Manageability issues and resource conflicts were identified within the remainder of the unit, which would make these areas more suitable for multiple use management. Routes and state lands within the sub-parcels further segment areas and result in some areas that are not contiguous to the WSA. Types of disturbances are seismic lines, reservoirs, rain gauge, a spring development, rip rap pit, old uranium disturbances and vehicle-based camping. Continued use and maintenance of these existing resources could detract from the wilderness experience expected by visitors, creating conflict among users. The unit has been identified as having high potential for minerals. Uranium mining activities occur directly across Highway 276 from the third parcel (Del Monte Mine, Tony M Mine), and there is potential for conflicts with uranium development in this area. There are four state sections within the non-WSA lands with wilderness characteristics unit.

Decisions proposed in the Proposed RMP for other resources or values would provide additional protection for the portions of the Little Rockies unit managed for multiple use. There would be 16,900 acres designated as VRM Class II. Motorized use within the unit would be limited to designated routes. Oil and Gas Leasing with minor constraints would apply to 4,100 acres and restricted to NSO on 9,500 acres of the unit.

Mount Ellen-Blue Hills

There are 3,900 acres (three parcels) within the Mount Ellen-Blue Hills unit, directly adjacent to the Mount Ellen-Blue Hills WSA, which would be managed for wilderness characteristic values.

The Mount Ellen-Blue Hills unit consists of many sub-parcels adjacent to the Mount Ellen-Blue Hills WSA. The parcels chosen for management of wilderness characteristics include all northern and southern parcels and an area east of the Birch Creek access. Management for wilderness characteristics would complement the WSA and overall management of the area.

Manageability issues and resource conflicts were identified within the remainder of the unit, making these areas more suitable for multiple-use management. Routes and state lands within the sub-parcels further segment areas and result in some areas that are not contiguous to the WSA. Some of the sub-parcels include a higher density of range developments and routes (30 miles of inventoried routes and 9.91 miles of cherry-stemmed routes occur within this area). Types of disturbances include numerous fences, spring developments with pipelines and troughs, corrals, reservoirs, erosion control structures, and mining-related disturbances, and the western parcel is heavily used in support of commercial Special Recreation Permit (SRP) activities. Continued use and maintenance of these existing resources could detract from the wilderness experience expected by visitors, creating conflict among users. Portions of the unit include active mineral claims and have been identified as having high potential for minerals. There are seven state sections that would be contained within the non-WSA lands with wilderness characteristics unit or become isolated between the WSA and the unit.

Decisions proposed in the Proposed RMP for other resources or values would provide additional protection for the portions of the Mount Ellen-Blue Hills unit managed for multiple use. There would be 16,800 acres designated as VRM Class II. Motorized use within the unit would be limited to designated routes on 49,400 acres and closed on the remaining 400 acres. There were 2,261 acres of this unit identified for avoidance or exclusion of ROWs. Oil and Gas Leasing would be allowed with minor constraints on 18,000 acres and restricted to NSO on 4,100 acres of the unit.

Mount Pennell

There are 4,700 acres within the Mount Pennell unit, directly adjacent to the Mount Pennell WSA, which would be managed for wilderness characteristic values.

The Mount Pennell unit consists of several sub-parcels adjacent to the Mount Pennell WSA. The areas chosen for management of wilderness characteristics consist of six parcels adjacent to the WSA south of Tarantula Mesa. Management for wilderness characteristics would complement the WSA and overall management of the area.

Manageability issues and resource conflicts were identified within the remainder of the unit, which would make these areas more suitable for multiple-use management. Routes and state/private lands within the sub-parcels further segment areas and result in some areas that are not contiguous to the WSA. Some sub-parcels include a higher density of range developments and routes (31 miles of routes and additional miles of cherry-stemmed routes occur within this area). Types of disturbances are fencing, a proposed cattleguard, pipeline, reservoirs, erosion check dams, and habitat projects, which have been identified for retreatment and expansion, and the northwestern portion of the unit is heavily used in support of commercial SRP activities. Continued use and maintenance of these existing resources could detract from the wilderness experience expected by visitors, creating conflict between users. The unit has been identified as having high potential for minerals and recent uranium drilling projects have been occurring just to the east and south of the southern parcel. There are 10 state sections and two private parcels that would be contained within the non-WSA lands with wilderness characteristics unit or become isolated between the WSA and the unit.

Decisions proposed in the Proposed RMP for other resources or values would provide additional protection for the portions of the Mount Pennell unit managed for multiple use. There would be 13,000

acres designated as VRM Class II. Motorized use within the unit would be limited to designated routes. There were 2,309 acres of this unit identified for avoidance or exclusion of ROWs. Oil and Gas Leasing would be allowed with minor constraints on 44,200 acres and restricted to NSO on 4,600 acres of the unit.

Notom Bench

There are 8,200 acres within the Notom Bench non-WSA lands with wilderness characteristics unit, adjacent to the CRNP, which would be managed for wilderness characteristic values.

The Notom Bench unit consists of four separate parcels, which are adjacent to CRNP lands administratively endorsed for wilderness. All but the southern parcel would be managed for wilderness characteristics values. Routes would be designated to retain access to the Cottonwood Wash state section and the Oak Creek trailhead. As per coordination with Wayne County and CRNP, the user created route in Burro Wash would remain closed. Portions of the eastern boundary of these parcels follow the Notom Road and/or the powerline ROW. A 1,000-foot buffer would be afforded for the utility corridor along the Notom Road and powerline ROW.

Decisions proposed in the Proposed RMP for other resources or values would provide additional protection for the southern parcel of the Notom Bench unit. The parcel would be designated as VRM Class II. Motorized use within the unit would be limited to designated routes for administrative uses. Access to the parcel is restricted by the private land owner. Oil and Gas Leasing would be allowed with minor constraints on the unit.

Ragged Mountain

There are 7,900 acres within the Ragged Mountain unit, which would be managed for wilderness characteristic values.

The Ragged Mountain unit is a stand-alone unit located within the Henry Mountains range. New boundaries were identified that would provide for management of the wilderness characteristic values within the northwestern portion of the unit.

Manageability issues and resource conflicts were identified within the south and eastern portions of the unit that would make these areas more suitable for multiple-use management. Routes and a state section further segment the eastern portion of the unit. Types of disturbances are a BLM communication tower, spring development, protection fences, new catchments, and “chainings” related to the 2003 Bulldog Fire rehabilitation project. The western portion of the unit is heavily encroached by pinyon/juniper and is being considered for a fuels reduction project. Continued use and maintenance of these existing resources could detract from the wilderness experience expected by visitors, creating conflict among users. Portions of the unit include active mineral claims, and the unit has been identified as having high potential for minerals. The southeastern and eastern portions of the unit have an extensive network of historic mining roads related to uranium activities and gold exploration along Crescent Creek. New uranium drilling has been occurring and additional activity is proposed for these areas. One state section is located in the eastern portion of the unit.

Decisions proposed in the Proposed RMP for other resources or values would provide additional protection for the portions of the Ragged Mountain unit managed for multiple use. There would be 15,700 acres designated as VRM Class II. Motorized use within the unit would be limited to designated routes. There were 15,735 acres of this unit identified for avoidance or exclusion of ROWs. Oil and Gas Leasing would be allowed with minor constraints on 16,500 acres and restricted to NSO on 7,900 acres of the unit.

Red Desert

There are 8,900 acres within the Red Desert unit, adjacent to the CRNP, which would be managed for wilderness characteristic values.

The Red Desert unit consists of sub-parcels located between the Hartnet or Cathedral Valley roads and the CRNP boundary. The adjacent CRNP lands are administratively endorsed for wilderness. All of the sub-parcels adjacent to CRNP that are north of Highway 24 would be managed for wilderness characteristic values. Routes would be designated to retain access to CRNP lands at Temple of the Sun, Temple of the Moon, and Jailhouse Rock. Portions of the southern boundary of the sub-parcel adjacent to the Fremont River have been adjusted to exclude the power line for the communities of Hanksville and Caineville. A 1,000-foot buffer would be afforded for the utility corridor along this power line ROW.

The remainder of the Red Desert unit consists of one sub-parcel south of Highway 24 and the BLM lands bordered by the Hartnet Road, Highway 24, and the Cathedral Valley road. Manageability issues and resource conflicts were identified within these portions of the unit, which would make these areas more suitable for multiple-use management. Routes and state lands further segment these portions of the unit. Types of disturbances include reservoirs, vehicle camping spurs along the Cathedral Valley and Hartnet Roads, Fremont River gauging station, a proposed bentonite sale area, rain gauge, study exclosure, corrals, fencing, mining-related disturbances, well sites, culinary well and pipeline for the community of Caineville, a material stockpile area, new ROW to private property, and a pioneer cemetery. Many routes and camp areas are heavily used in support of commercial SRP activities. Continued use and maintenance of these existing resources could detract from the wilderness experience expected by visitors, creating conflict between users. Four state sections are located within the unit.

Decisions proposed in the Proposed RMP for other resources or values would provide additional protection for the portions of the Red Desert unit managed for multiple use. There would be 10,100 acres designated as VRM Class II. Motorized use within the unit would be limited to designated routes. Oil and Gas Leasing would be allowed with minor constraints.

Wild Horse Mesa

There are 8,700 acres of the Wild Horse Mesa unit within the RFO, which would be managed for wilderness characteristic values, consistent with management proposed by the PFO.

The Wild Horse Mesa unit is a stand-alone unit located partially within the RFO and partially within the PFO. New boundaries were identified to allow for a portion of the area to be managed for wilderness characteristic values consistently with the area proposed by the PFO. The identified routes on Big Wild Horse Mesa, which provide access to range improvements, would be designated for continued motorized use.

Manageability issues and resource conflicts were identified within the remainder of the RFO portion of the Wild Horse Mesa unit, which would make this area more suitable for multiple-use management. Routes and state lands further segment this portion of the unit. The unit includes 43 miles of inventoried routes, plus additional GPS routes identified during inventories conducted in preparation for the Draft RMP/EIS. Types of disturbances are fences, dispersed camp sites, stock ponds and reservoirs, mining related disturbances, and a guzzler. Continued use and maintenance of these existing resources could detract from the wilderness experience expected by visitors, creating conflict between users. Portions of the unit include active mineral leases and claims, and the unit has been identified as having high potential for minerals. There has been recent uranium interest and drilling occurring in the southern portion of the

unit since summer 2007. Six state sections are located within the unit, including one that is leased for the Mars Experiment Station.

Decisions proposed in the Proposed RMP for other resources or values would provide additional protection for the portions of the Wild Horse Mesa unit managed for multiple use. There would be 18,200 acres designated as VRM Class II. Motorized use within the unit would be limited to designated routes. Three acres of this unit were identified for avoidance or exclusion of ROWs. Oil and Gas Leasing with minor constraints would apply to 2,300 acres and restricted to NSO on 8,800 acres of the unit..

Non-WSA Lands With Wilderness Characteristics Units to be Managed for Multiple Use

BLM staff reviewed the following units and weighed the considerations of the wilderness characteristic values, as well as the ability to manage and protect these values. Other resources and resource uses were considered, as were existing conflicts between resource uses. Proposed decisions within the RFO Proposed RMP that would provide alternative ways of protecting the wilderness characteristic values were also reviewed. Based on these factors, the following non-WSA lands with wilderness characteristic units would be managed for multiple use.

The following proposed decisions would provide similar protection to all the non-WSA lands with wilderness characteristic units. Proposed decisions for riparian protection zones would protect the naturalness of those areas. Decisions for the allocation of cultural sites to scientific, public, conservation, and traditional and experimental uses would increase knowledge of cultural resources and enhance opportunities for primitive forms of recreation. Protection of cultural resources adds to the character of the setting that supports these recreational opportunities. Strategies that would be employed for avoiding or reducing fragmentation of special status species habitat (e.g., collocating communication and other facilities, employing directional drilling for oil and gas, and closing and reclaiming roads) would help consolidate surface disturbing activities and protect additional acres from loss of naturalness. Site-specific decisions that would provide management protection such as VRM Class and off-highway vehicle (OHV) designations, ROW avoidance/exclusion areas, and Oil and Gas Leasing categories are addressed individually for the units.

Bull Mountain

Manageability issues and resource conflicts were identified within the Bull Mountain unit, which would make this area more suitable for multiple-use management. Two reservoirs are within the unit and mining disturbances in and adjacent to the unit. Access to one of the reservoirs and portions of the mining disturbances were cherry stemmed out of the unit during inventory. The unit has been identified as having high potential for minerals; based on past activities, future mineral interest is likely. Areas within and adjacent to the Bull Mountain WSA and this non-WSA lands with wilderness characteristics unit contain chaining projects. The portions of the projects outside the WSA were maintained in 2002. The non-WSA lands with wilderness characteristics unit would isolate a state section between the unit and the WSA with no identified access. The Bull Mountain unit would continue to be managed for multiple use, including potential for mineral development and future access to state land.

Decisions proposed in the Proposed RMP for other resources or values would provide management protection for portions of the Bull Mountain unit. There would be 65 acres designated as VRM Class II. This designation would retain the characteristic landscape, allowing for only minor changes to the landform and vegetation. Motorized use within the unit would be limited to designated routes. There were

72 acres of this unit identified for avoidance or exclusion of ROWs. Oil and Gas Leasing with minor constraints would apply to 2,800 acres of the unit.

Bullfrog Creek

Manageability issues and resource conflicts were identified within the Bullfrog Creek unit, which would make this area more suitable for multiple-use management. Routes and state lands segment this stand-alone unit, creating sub-parcels that would reduce manageability for wilderness characteristic values. The area includes 21 miles of inventoried routes and 5.35 miles of cherry-stemmed routes. Types of disturbances are a spring development, reservoirs, drill hole, overlook, a gravel pit, and petrified wood collection area. Continued use and maintenance of these existing resources could detract from the wilderness experience expected by visitors, creating conflict among users. The unit has been identified as having high potential for minerals and is adjacent to the Tony M/Ticaboo uranium mining and milling projects. Uranium prospecting has occurred in the unit as reflected by the existing mining routes and adits, and future mineral interest is likely. Three state sections are located within the unit, two of which would be isolated with no identified access. Because of the proximity to the existing Ticaboo uranium projects and existing previous mining activity within the unit, the Bullfrog Creek unit would continue to be managed for multiple use, including potential for mineral development and future access to state land.

Fiddler Butte

Manageability issues and resource conflicts were identified within the Fiddler Butte unit, which would make this area more suitable for multiple-use management. Routes and state lands segment this unit, creating sub-parcels that would reduce manageability for wilderness characteristic values. Types of disturbances are spring developments and reservoirs with existing access and a corral. Numerous locations along the Poison Spring road are being used for dispersed vehicle camping with spur routes for access. Continued use and maintenance of these existing resources could detract from the wilderness experience expected by visitors, creating conflict among users. The unit has been identified as having high potential for minerals. Recent uranium drilling has been occurring adjacent to the Poison Spring road, including maintenance of access routes. Some previous mining activities are still noticeable. One state section is located within the unit, and one state section would be isolated between the Fiddler Butte WSA and the non-WSA lands with wilderness characteristics unit. The Fiddler Butte unit would continue to be managed for multiple use, including potential for mineral development, grazing administration, motorized recreational opportunities, and future access to state land.

Decisions proposed in the Proposed RMP for other resources or values would provide management protection for portions of the Fiddler Butte unit. There would be 11,000 acres of the unit designated as VRM Class II. Motorized use within the unit would be limited to designated routes. Oil and Gas Leasing with minor constraints would apply to 10,900 acres of the unit.

Flat Tops

Manageability issues and resource conflicts were identified within the Flat Tops unit, which would make this area more suitable for multiple-use management. The unit is partially located within the RFO, but extends into BLM PFO administered lands. Management considerations were made for consistency with the management decisions of the PFO to continue to manage this unit for multiple use. Routes and state lands within the RFO portion of the unit, create sub-parcels that would reduce manageability for wilderness characteristic values. Types of disturbances include allotment fences, ponds, seismic routes in various stages of rehabilitation, drill holes, and an equipment loading ramp. Continued use and maintenance of these existing resources could detract from the wilderness experience expected by visitors, creating conflict between users. The unit has been identified as having high potential for minerals

and 92 percent of the unit is currently leased. Three state sections are located within the unit. As a result of mineral potential and leases occurring within the unit, the Flat Top unit would continue to be managed for multiple use, including potential for mineral development and future access to state lands.

Fremont Gorge

Manageability issues and resource conflicts were identified within the Fremont Gorge unit, which would make this area more suitable for multiple-use management. Types of disturbances are numerous dispersed vehicle camping areas, reservoirs, study plot, wood cutting activities, sandstone quarry locations, mining disturbances, and chaining projects. The Parker Mountain Management Framework Plan (MFP) identified this area for wood products and in accordance with the MFP, this area has been the only area available for wood product sales on BLM lands within Wayne County, West of CRNP. Continued use and maintenance of these existing resources could detract from the wilderness experience expected by visitors, creating conflict among users. The unit has been identified as having high potential for minerals. Uranium mining has occurred in the past, and portions of the area are covered by copper claims. A Community Wildfire Protection Plan has been completed for Central Wayne County. The plan proposes fuels reduction treatments in Wildland Urban Interface (WUI) areas on private, state, Forest Service, and BLM lands within 1.5 miles of communities at risk. Two of the communities included in this plan are Torrey and Grover, which are located along the Western side of the unit. The Fremont Gorge unit would continue to be managed for multiple use, including potential for mineral development and WUI activities.

Decisions proposed in the Proposed RMP for other resources or values would provide management protection for portions of the Fremont Gorge unit. There would be 2,200 acres designated as VRM Class II. Management of the suitable Fremont Gorge wild and scenic river would provide protection from surface disturbance along the river corridor. Motorized use within the unit would be limited to designated routes on 14,500 acres and closed within 1,500 acres of the unit. There were 1,485 acres of this unit identified for avoidance or exclusion of ROWs. Oil and Gas Leasing would be allowed with minor constraints on 14,500 acres and restricted to NSO on 1,500 acres of the unit.

Kingston Ridge

Manageability issues and resource conflicts were identified within the Kingston Ridge unit, which would make this area more suitable for multiple-use management. Routes and state lands segment this unit, creating sub-parcels that would reduce manageability for wilderness characteristic values. Types of disturbances include fencing, spring, and pipeline developments. Continued use and maintenance of these existing resources could detract from the wilderness experience expected by visitors, creating conflict between users. Two state sections are located within the unit. The Kingston Ridge unit would continue to be managed for multiple use, including potential for mineral development, grazing administration, and future access to state land.

Decisions proposed in the Proposed RMP for other resources or values would provide management protection for portions of the Kingston Ridge unit. There would be 100 acres designated as VRM Class II. Motorized use within the unit would be limited to designated routes. Oil and Gas Leasing would be allowed with minor constraints.

Limestone Cliffs

Manageability issues and resource conflicts were identified within the Limestone Cliffs unit, which would make this area more suitable for multiple-use management. The unit is partially located within the RFO, but extends into BLM PFO administered lands. Management considerations were made for consistency with the management decisions of the PFO to continue to manage this unit for multiple use. Routes and

state/private lands segment this unit, creating sub-parcels that would reduce manageability for wilderness characteristic values. Inventories identified 17 miles of routes and 3.02 miles of cherry-stemmed routes within the area. Types of disturbances include allotment fencing, reservoirs, pipelines and storage, a Section 4 cabin, study exclosure, livestock trailing, and camping and mining disturbances. Continued use and maintenance of these existing resources could detract from the wilderness experience expected by visitors, creating conflict between users. The unit has been identified as having high potential for minerals. Two private parcels occur within the unit, along with associated fencing, water systems, and development. The Limestone Cliffs unit would continue to be managed for multiple use, including future access and infrastructure for private lands, potential for mineral development, and grazing administration.

Decisions proposed in the Proposed RMP for other resources or values would provide management protection for portions of the Limestone Cliffs unit. Motorized use within the unit would be limited to designated routes. Oil and Gas Leasing with minor constraints would occur on 24,700 acres of the unit.

Long Canyon

Manageability issues and resource conflicts were identified within the Long Canyon unit, which would make this area more suitable for multiple-use management. Routes segment this unit, creating sub-parcels, which would reduce manageability for wilderness characteristic values. Types of disturbances include reservoirs and the Halls Creek trailhead, which includes picnic tables, trailhead information, and dispersed vehicle camping sites. The Halls Creek Trailhead is and would continue to be managed under a memorandum of understanding with CRNP. Continued use and maintenance of these existing resources could detract from the wilderness experience expected by visitors, creating conflict between users. The unit has been identified as having high potential for minerals. Two state sections are isolated within the unit with no identified access. The Long Canyon unit would continue to be managed for multiple use, including potential for mineral development, grazing administration, and motorized access to recreational opportunities.

Mount Hillers

Manageability issues and resource conflicts were identified within the Mount Hillers unit, which would make this area more suitable for multiple-use management. The unit has been identified as having high potential for minerals. The northeastern portion of the parcel contains an extensive network of mining routes from previous uranium mining activities. The RFO has received drilling proposals north of this unit and expect to receive similar proposals to the south. The Mount Hillers unit would continue to be managed for multiple use, including potential for mineral development.

Decisions proposed in the Proposed RMP for other resources or values would provide management protection for the Mount Hillers unit. There would be 1,200 acres designated as VRM Class II. Motorized use within the unit would be limited to designated routes. There were 1,236 acres of this unit identified for avoidance or exclusion of ROWs. Oil and Gas Leasing would be allowed with minor constraints on 500 acres and restricted to NSO on 1,300 acres of the unit.

Muddy Creek/Crack Canyon

Manageability issues and resource conflicts were identified within the Muddy Creek/Crack Canyon unit, which would make this area more suitable for multiple-use management. The unit is partially located within the RFO, but the majority of the unit is located within BLM PFO administered lands. Management considerations were made for consistency with the management decisions of the PFO. The PFO would continue to manage the portion of unit adjacent to the RFO for multiple use. Routes and state lands segment this unit (31 miles of inventoried routes) creating sub-parcels that would reduce manageability

for wilderness characteristic values. Types of disturbances include reservoirs, mining-related disturbances, vehicle camping spurs along the Cathedral Valley Road and many routes, and camp areas are heavily used in support of commercial SRP activities. Portions of this unit near Factory Butte are proposed as a managed open area for motorized use with supporting infrastructure. Managing the adjacent areas for wilderness characteristics would create an expectation from non-motorized users that would likely create conflicts between them and motorized users. The unit has been identified as having high potential for minerals, and gypsum and uranium mining activities have occurred in the past. Seven state sections are located within the unit, two of which would be isolated with no identified access. The Muddy Creek/Crack Canyon unit would continue to be managed for multiple use, including motorized recreation opportunities, potential for mineral development, and future access to state land.

Decisions proposed in the Proposed RMP for other resources or values would provide management protection for portions of the Muddy Creek/Crack Canyon unit. There would be 8,100 acres designated as VRM Class II. Motorized use would be limited to designated routes on 50,352 acres and closed within 4,700 acres of the unit. Management prescriptions for the North Caineville Mesa Area of Critical Environmental Concern (ACEC) would provide protection for that portion of the unit. There were 3,840 acres of this unit identified for avoidance or exclusion of ROWs. Oil and Gas Leasing would be allowed with minor constraints on 10,400 acres and restricted to NSO on 3,800 acres of the unit.

Mussentuchit Badlands

The Mussentuchit Badlands unit is partially located within the RFO, but the majority of the unit is located within BLM PFO administered lands. Management considerations were made for consistency with the management decisions of the PFO. The PFO would continue to manage the portion of the unit adjacent to the RFO for multiple use. Therefore, the portion of the unit within the RFO would also be managed for multiple use.

Decisions proposed in the Proposed RMP for other resources or values would provide management protection for portions of the Mussentuchit Badlands unit. Motorized use within the unit would be limited to designated routes. Oil and Gas Leasing with minor constraints would apply to 100 acres of the unit.

Phonolite Hill

Manageability issues and resource conflicts were identified within the Phonolite Hill unit, which would make this area more suitable for multiple-use management. Routes and state lands segment this unit, creating sub-parcels that would reduce manageability for wilderness characteristic values. Types of disturbances are a cabin, mining-related disturbances, spring developments and protection fencing, allotment fencing, and a pipeline. Continued use and maintenance of these existing resources could detract from the wilderness experience expected by visitors, creating conflict between users. One state section is located within the unit. The Phonolite Hill unit would continue to be managed for multiple use, including grazing administration and access to state land.

Decisions proposed in the Proposed RMP for other resources or values would provide management protection for portions of the Phonolite Hill unit. There would be 1,000 acres designated as VRM Class II. Motorized use within the unit would be limited to designated routes. Oil and Gas Leasing would be allowed with minor constraints within the unit.

Pole Canyon/Hunter Spring

Manageability issues and resource conflicts were identified within the Pole Canyon/Hunter Spring unit, which would make this area more suitable for multiple-use management. Routes, some of which provide

access to Forest Service lands, segment the unit (13 miles of inventoried routes) creating sub-parcels that would reduce manageability for wilderness characteristic values. Types of disturbances are fencing, a communication tower, springs, and the culinary water pipeline for the Town of Antimony. Continued use and maintenance of these existing resources could detract from the wilderness experience expected by visitors, creating conflict between users. The Pole Canyon/Hunter Spring unit would continue to be managed for multiple use, including access to Forest Service lands and maintenance of the Antimony culinary water pipeline.

Decisions proposed in the Proposed RMP for other resources or values would provide management protection for portions of the Pole Canyon/Hunter Spring unit. Motorized use within the unit would be limited to designated routes. Oil and Gas Leasing would be allowed with minor constraints.

Rock Canyon

The Rock Canyon unit is partially located within the RFO, but the majority of the unit is located within BLM PFO administered lands. Management considerations were made for consistency with the management decisions of the PFO. The PFO would continue to manage the portion of the unit adjacent to the RFO for multiple use. Therefore, the portion of the unit within the RFO would also be managed for multiple use.

Decisions proposed in the Proposed RMP for other resources or values would provide management protection for portions of the Rock Canyon unit. Motorized use within the unit would be limited to designated routes. Oil and Gas Leasing with minor constraints would apply to 500 acres of the unit.

Rocky Ford

Manageability issues and resource conflicts were identified within the Rocky Ford unit, which would make this area more suitable for multiple-use management. Routes, including access to private lands, segment this unit creating sub-parcels that would reduce manageability for wilderness characteristics values. Types of disturbances include spring developments, pipelines to troughs, reservoirs, and mining related disturbance. Continued use and maintenance of these existing resources could detract from the wilderness experience expected by visitors, creating conflict between users. The Rocky Ford unit would continue to be managed for multiple use, including grazing administration and continued access to private land.

Decisions proposed in the Proposed RMP for other resources or values would provide management protection for portions of the Rocky Ford unit. There would be 400 acres designated as VRM Class II. Motorized use within the unit would be limited to designated routes. Oil and Gas Leasing would be allowed with minor constraints.

Sweetwater Reef

The Sweetwater Reef unit is partially located within the RFO, but the majority of the unit is located within BLM PFO administered lands. Management considerations were made for consistency with the PFO's management decisions. The PFO would continue to manage the portion of the unit adjacent to the RFO for multiple use. Therefore, the portion of the unit within the RFO also would be managed for multiple use. Manageability issues and resource conflicts were identified within the Sweetwater unit, which would make this area more suitable for multiple-use management. Types of disturbances are routes, range developments, and allotment fencing. The unit has been identified as having high potential for minerals and current leases are held within the unit. One state section is located within the RFO portion of the unit with no identified access.

Wildcat Knolls

Manageability issues and resource conflicts were identified within the Wildcat Knolls unit, which would make this area more suitable for multiple-use management. The Wildcat Knolls unit is partially located within the PFO, with the majority of this unit within the RFO. Coordination with the PFO indicated that they have a pending ROW application that would affect the lands within the PFO portion of the unit. The unit has been identified as having high potential for minerals and because of its proximity to existing mining operations, future interest for minerals development is likely. One state section is located within the unit with no identified access. The Wildcat Knolls unit would continue to be managed for multiple use, including potential for mineral development and future access to state land.

Decisions proposed in the Proposed RMP for other resources or values would provide management protection for portions of the Wildcat Knolls unit. Motorized use within the unit would be limited to designated routes. Oil and Gas Leasing with minor constraints would apply to 5,900 acres of the unit.

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APPENDIX 17—UTAH PUBLIC LANDS STUDY: KEY SOCIAL SURVEY FINDINGS FOR GARFIELD, PIUTE, SANPETE, SEVIER, AND WAYNE COUNTIES

Utah State University conducted a statewide social survey in 2007 to assess the ways in which Utah residents use and value public land resources, and their views about public land management. Random samples of residential households were selected in each of the state's 29 counties. Sampled households were contacted by mail, and a randomly selected adult from the household was asked to participate in the survey. The university distributed self-completion questionnaires to potential survey participants using a multiple-wave survey administration procedure. The discussion that follows is focused on key survey results obtained for Garfield County (n=125 survey responses), Piute County (n=28), Sanpete County (n=133), Sevier County (n=139) and Wayne County (n= 41).[1]

The State of Utah Public Lands Policy Coordination Office has asked that BLM refer readers to its website at http://governor.utah.gov/publiclands where it posts updated State of Utah socioeconomic information from time to time. The BLM does not participate in collecting or compiling this information. For purposes of this PRMP/FEIS, BLM has only relied on information specifically cited in the PRMP/FEIS text and included in this Appendix.

ECONOMIC LINKAGES TO PUBLIC LANDS

One major focus of the survey questionnaire involved assessing the various ways in which Utah residents engage in economic activities that are linked directly or indirectly to public land resources in the state.

Permit-Based Economic Activities

As indicated in Table A17-1, a minority of survey respondents in each of the five counties considered in this summary reported that a portion of their household income is directly linked to activities that involve permitted uses of lands or resources administered by the U.S. Forest Service (USFS), the Bureau of Land Management (BLM), other federal agencies, or the State of Utah. The percentage of respondents indicating that some portion of their household income is derived from such permit-based activities was higher for each of the agency categories in Garfield, Piute, and Wayne counties than was the case in either Sevier County or Sanpete County. In Garfield and Piute counties, approximately one-fourth of the respondents indicated that a portion of their household income is linked to permitted activities that occur on lands administered by USFS. In Garfield, Piute, and Wayne counties, approximately one-fifth of respondents reported that household income is linked to activities that occur on BLM lands.

[1] *The numbers of respondents for Piute and Wayne counties are small in part because the commercial firm that provided random samples of residential mailing addresses for the statewide survey was able to identify only 92 potentially valid residential addresses in Piute County and 145 in Wayne County. In addition, 30 of the questionnaire packets that were mailed to addresses included in the Piute County sample and 62 of those mailed to addresses in Wayne County were returned as undeliverable. As a result of these unexpectedly small sample sizes, results for Piute and Wayne counties should be interpreted cautiously.*

Table A17-1. Percentage of survey respondents reporting that a portion of household income is directly linked to permitted use of public lands or resources.

Agency	Garfield County	Piute County	Sanpete County	Sevier County	Wayne County
USFS	22.4%	25.9%	7.5%	14.5%	17.1%
BLM	20.0%	18.5%	4.5%	11.6%	19.5%
Other federal agency	9.6%	7.4%	3.0%	1.5%	7.3%
State of Utah	11.2%	16.0%	4.5%	7.3%	12.5%

The figures reported in Table A17-2 represent the percentages of respondents reporting these types of permit-based economic linkages to public lands who indicated that 25 percent or more of their total household income is derived from those activities. In each of the five counties, substantial proportions of the respondents who reported involvement in permitted activities indicated that a quarter or more of their household incomes is linked to activities permitted by one or more federal or state land management agencies. Such levels of economic dependence on permitted activities were highest for Garfield County respondents, who reported permitted activities on lands administered by "other federal agencies" and USFS; among Piute County respondents who reported use of state lands; among Sanpete County respondents who reported use of BLM, other federal agency, and state lands; among Sevier County respondents who use USFS, state, or other federal agency lands; and among Wayne County respondents who engage in permitted uses of USFS, other federal agency, or state lands.

Table A17-2. Percentage of survey respondents reporting permit-based economic activities on public lands, who indicated that 25 percent or more of their household income is derived from those activities.

Agency	Garfield County	Piute County	Sanpete County	Sevier County	Wayne County
USFS	42.9%	14.3%	40.0%	68.4%	85.7%
BLM	32.0%	20.0%	50.0%	43.7%	37.5%
Other federal agency	66.7%	0.0%	50.0%	50.0%	75.0%
State of Utah	21.4%	50.0%	50.0%	60.0%	60.0%

Household Participation in Selected Commercial Activities

The next series of questions asked respondents to indicate whether they or members of their households participate in any of a number of commercial activities that are commonly associated with public land use, but can involve the use of either public or private lands. Results summarized in Table A17-3 indicate that only a minority of survey respondents in each of the five counties reported participation in any of these activities. Among Garfield County respondents, the activities reported most frequently were livestock grazing and related work (23.4% of respondents) and commercial firewood cutting (19.4%). In Piute County, participation was reported most frequently for livestock grazing and related work (29.6%) and commercial firewood cutting (25.0%). In Sanpete County, the activity reported most frequently was livestock grazing and related work (11.3%). In Sevier County, respondents most frequently reported

participation in mining coal, uranium, or other minerals (14.6%). In Wayne County, the activities reported most frequently were livestock grazing and related work (12.2%) and other miscellaneous commercial activities (19.4%).

Table A17-3. Percentage of survey respondents reporting that they or members of their households participate in selected resource-based commercial activities, on either public or private lands.

Economic Activity	Garfield County	Piute County	Sanpete County	Sevier County	Wayne County
Livestock grazing and related work	23.4%	29.6%	11.3%	8.8%	12.2%
Commercial firewood cutting	19.4%	25.0%	8.3%	8.0%	4.9%
Logging, post and pole cutting, or other timber-related work	8.9%	10.7%	2.3%	7.3%	7.3%
Mining coal, uranium, or other solid minerals	0.8%	7.1%	2.3%	14.6%	0.0%
Mining sand, gravel, or other construction materials	2.4%	3.6%	2.3%	5.8%	4.9%
Oil and gas exploration and development	2.4%	0.0%	4.5%	4.4%	0.0%
Operating an outfitting or guiding business	5.7%	0.0%	0.0%	2.2%	0.0%
Film making/commercial photography	0.8%	0.0%	2.3%	2.2%	0.0%
Other commercial activities	5.2%	4.8%	5.5%	2.4%	19.4%

Household Involvement in Businesses Linked to Recreation/Tourism

Survey respondents were also asked whether they or any member of their household operate or work in a business linked to recreation or tourism activity that is influenced by the presence of public lands and resources. The percentages of respondents who said “yes” to this question were highest in Wayne County (51.3%), in Garfield County (40.3%), and in Piute County (33.3%). Substantially lower percentages of respondents from Sevier (8.1%) and Sanpete (5.3%) counties indicated this type of economic linkage for their households. Respondents were also asked to assess how important activities and uses linked to public lands are to the success of this business. Among respondents who reported household involvement in such businesses, the proportions who said that the influence of public lands is “extremely important” to that business were 64.0% in Garfield County, 66.7% in Piute County, 44.4% in Sanpete County, 36.4% in Sevier County, and 75.0% in Wayne County.

Household Involvement in Businesses Linked to Commodity Production

A similar question asked about the involvement of survey participants and members of their households in businesses that provide services and supplies to farming or ranching operations, logging firms, or other commercial enterprises that use or process natural resources located on public lands. The percentage of

respondents reporting participation by a household member in such businesses was relatively low in each of the five counties: 13.8% in Garfield County, 22.2% in Piute County, 11.4% in Sanpete County, 7.3% in Sevier County, and 23.1% in Wayne County.

Ownership of Property or Assets With Values Influenced by Nearby Public Lands

When asked whether they own land, buildings, or other assets that they believe have a monetary value that is significantly influenced by the presence and condition of nearby public lands, 54.9% of respondents in Garfield County, 74.1% in Piute County, 22.7% in Sanpete County, 28.7% in Sevier County, and 61.5% in Wayne County said "yes." Those who did perceive the existence of such a relationship were then asked to identify specific types of assets that they own and that they believe have a value influenced by the close proximity of public lands. Respondents in all five of these counties most frequently cited the value of their permanent, year-round residential property (38.4% in Garfield County, 50.0% in Piute County, 15.8% in Sanpete County, 15.8% in Sevier County, and 48.8% in Wayne County) as being influenced by the presence and condition of nearby public lands.

PERCEIVED IMPORTANCE OF PUBLIC LANDS FOR OVERALL QUALITY OF LIFE

Survey participants were also asked to report how important they think 15 different types of public land resources and resource uses are for the overall quality of life experienced by people living in their communities. Table A17-4 summarizes response patterns to this series of questions for Garfield, Piute, Sanpete, Sevier, and Wayne counties, with a focus on the percentage of respondents from each county who indicated that they consider a particular type of resource use to be "very important" for local quality of life.

Table A17-4. Percentage of survey respondents indicating that selected public land resource uses are "very important" to the overall quality of life in their community.

Resource Use	Garfield County	Piute County	Sanpete County	Sevier County	Wayne County
Grazing of livestock on public lands	86.3%	80.8%	71.5%	67.2%	79.5%
Water resources used to irrigate crops and pastures	96.8%	92.6%	95.4%	92.6%	100.0%
Water resources used to supply homes and businesses	94.4%	77.8%	96.9%	91.9%	89.7%
Water resources that provide important fish/wildlife habitat	70.2%	84.6%	74.4%	79.1%	79.5%
Energy resources such as oil, gas, coal, or uranium	46.6%	47.4%	40.3%	68.2%	33.3%
Sand, gravel, or other minerals used in building and construction industries	40.5%	25.0%	25.2%	43.8%	41.7%

Resource Use	Garfield County	Piute County	Sanpete County	Sevier County	Wayne County
Forested areas that provide timber used by logging operations and lumber mills	71.8%	26.9%	47.6%	37.9%	55.3%
Areas in which trees or other vegetation provide important wildlife habitat	59.7%	63.0%	71.2%	73.5%	71.7%
Areas that attract tourism and recreational activity	75.4%	64.3%	48.1%	57.5%	76.9%
Opportunities to enjoy off-road vehicles, snowmobiling, or other motorized recreation	51.2%	78.6%	55.8%	59.6%	56.8%
Opportunities to enjoy hiking, backpacking, cross-country skiing, horseback riding, or other types of non-motorized recreation	64.5%	66.7%	55.4%	51.1%	74.4%
Opportunities to hunt for wild game	76.6%	75.0%	60.9%	69.9%	56.4%
Opportunities to fish in area lakes, streams, and rivers	77.4%	85.7%	65.9%	73.3%	64.1%
Undeveloped landscapes in which motorized access and resource development are restricted	26.7%	34.6%	34.7%	35.5%	33.3%
Areas managed to maintain biodiversity and protect habitat for sensitive or important plants or wildlife	32.2%	37.5%	41.9%	36.7%	34.2%

In Garfield County, 4 of the 15 types of public land resource use presented in this question were considered "very important" by fewer than one-half of respondents (energy resource development, sand/gravel or other construction-related mineral development, undeveloped landscapes in which motorized access and resource development are restricted, and areas managed to maintain biodiversity and protect habitat). At the same time, more than three-fourths of Garfield County respondents considered grazing of livestock on public lands; water resources used to irrigate crops and pastures; water resources used to supply homes and businesses; areas that attract tourism and recreation activity; opportunities to hunt for wild game; and opportunities to fish in area lakes, rivers, and streams to be "very important" to the local quality of life.

In Piute County, six of these resource uses were considered "very important" by fewer than one-half of the respondents (energy resources; sand, gravel, or other minerals; forested areas that provide timber for logging and lumber mills; areas that attract tourism and recreation; undeveloped landscapes in which motorized access and resource development are restricted; and areas managed to maintain biodiversity and to protect habitat). Conversely, three resource uses—water resources used to irrigate crops and pastures; water resources used to supply homes and businesses; and water resources that provide important fish or wildlife habitat—were considered "very important" to the local quality of life by more than three-fourths of Piute County respondents.

Six of these resource uses were considered "very important" by fewer than one-half of Sanpete County respondents: energy resources; sand, gravel, or other construction minerals; forested areas providing timber for logging and mill operations; areas that attract tourism and recreation; undeveloped landscapes in which motorized access and resource development are restricted; and areas managed to maintain biodiversity and protect habitat. At the same time, three-fourths or more of the respondents from Sanpete County considered water used for irrigation, water used to supply homes and business, and water providing important fish or wildlife habitat to be very important to the local quality of life.

In Sevier County, four resource uses were considered to be "very important" by fewer than one-half of respondents: sand, gravel, or other minerals; forested areas that provide timber for logging and lumber mills; undeveloped landscapes in which motorized access and resource development are restricted; and areas managed to maintain biodiversity and protect habitat. As was true in all of the counties, the three water resource categories (water used for irrigation, water used to supply homes and business, and water providing important fish or wildlife habitat) were considered very important to the local quality of life by 75 percent or more of Sevier County respondents.

Four of the resource use categories were considered to be very important to local quality of life by fewer than one-half of Wayne County respondents: energy resources; sand, gravel, or other construction minerals; undeveloped landscapes in which motorized access and resource development are restricted; and areas managed to maintain biodiversity and protect habitat. Five of the resource uses were considered very important by three-fourths or more of the respondents: grazing of livestock on public lands, water used for irrigation, water used to supply homes and business, water providing important fish or wildlife habitat, and areas that attract tourism and recreation activity.

RECREATIONAL USES OF PUBLIC LANDS

Survey participants were also asked to report whether they had participated in any of a broad range of outdoor recreation activities and other non-commodity use activities on Utah public lands during the previous 12 months. Results from this series of questions are reported in Table A17-5 and Table A17-6. These findings clearly indicate that there is widespread participation in many of these public land activities among residents of each of the five counties considered in this summary report.

Table A17-5 reports the extent of reported participation in 30 different outdoor recreation activities. Among survey participants living in Garfield County, one-half or more reported participation during the preceding 12 months in camping, picnicking, day hiking, wildlife viewing, hunting, fishing, visiting historical sites, all-terrain vehicle (ATV) riding, and driving for pleasure/sightseeing on public lands. In Piute County, one-half or more of the limited number of survey respondents reported that they had participated in camping, picnicking, day hiking, wildlife viewing, nature photography, motor boating, hunting, fishing, visiting historical sites, ATV riding, four-wheel driving, and driving for pleasure/sightseeing. Half or more of Sanpete County respondents reported participation in camping, picnicking, day hiking, wildlife viewing, fishing, visiting historical sites, ATV riding, and driving for pleasure/sightseeing. In Sevier County the activities reported by 50 percent or more of respondents included camping, picnicking, fishing, visiting historical sites, ATV riding, and driving for pleasure/sightseeing. Finally, one-half or more of Wayne County respondents reported that during the past 12 months, they has participated in camping, picnicking, day hiking, wildlife viewing, nature photography, hunting, fishing, rock hounding, visiting historical sites, ATV riding, four-wheel driving, and driving for pleasure/sightseeing.

Responses to a question focusing on participation in a variety of non-commodity use activities on public lands are summarized in Table A17-6. Among this list of activities, Garfield County respondents were

most likely to report that they participate in collecting firewood for home use, cutting Christmas trees, gathering pinyon nuts, and collecting rocks for home landscaping. In Piute County, respondents most frequently reported that they collect firewood for home use, cut Christmas trees, collect rocks for home landscaping, and gather pinyon nuts. Sanpete County respondents most frequently reported that they collect firewood for home use. Sevier County respondents most frequently reported that they cut Christmas trees. In Wayne County, respondents were most likely to report that they collect firewood for home use, cut Christmas trees, collect rocks for home landscaping, and gather pinyon nuts. On balance, reliance on public lands for these types of non-commodity activities appears to be higher in Garfield, Piute, and Wayne counties than is the case in Sanpete County or Sevier County.

Respondents were also asked to identify from the lists presented in these questions the one or two activities that they participate in most often, and to provide detail on where they engage in those activities. Response data for these questions are currently being processed for Sanpete and Wayne counties, and as a result are not yet available for inclusion in this summary report. Among Garfield County respondents, the first of these activities listed by respondents most often involved hunting (16.4%) or fishing (14.5%). In Piute County, the first listed activity most often involved either ATV riding (37.5%) or hunting (20.8%). In Sevier County, the first-listed activities most often involved camping (26.3%) or ATV riding (16.9%). When asked to indicate where they participate in the first-listed of their "most frequently pursued" activities, 84.7% of Garfield County respondents, 83.3% of Piute County respondents, and 80.2% of Sevier County residents identified a location within the county where they live.

Table A17-5. Percentage of survey respondents reporting participation in selected recreation activities on Utah public lands during the past 12 months.

Activity	Garfield County	Piute County	Sanpete County	Sevier County	Wayne County
Camping	64.7%	76.9%	69.5%	69.3%	73.2%
Picnicking	72.9%	84.6%	77.1%	74.3%	80.5%
Backpacking	22.6%	29.6%	21.6%	18.1%	39.5%
Day hiking	59.1%	50.0%	52.0%	46.9%	80.0%
Bird watching	33.9%	34.6%	30.2%	20.6%	39.5%
Wildlife viewing	75.0%	85.2%	65.1%	73.1%	80.0%
Nature photography	35.1%	50.0%	33.3%	39.1%	56.4%
Canoeing/kayaking	3.8%	19.2%	2.4%	3.2%	8.3%
River rafting	3.8%	11.5%	4.0%	8.7%	2.9%
Motor boating	20.4%	51.9%	24.2%	36.2%	32.4%
Jet skiing	5.8%	14.8%	9.7%	6.3%	5.4%
Swimming	30.8%	29.6%	35.5%	23.4%	24.3%
Rock climbing	13.2%	3.8%	12.1%	7.3%	25.7%
Mountain climbing	11.4%	7.4%	20.2%	22.2%	22.2%
Hang gliding	0.0%	3.8%	0.0%	0.0%	0.0%
Mountain bike riding	13.2%	7.7%	16.9%	13.5%	11.1%
Hunting	56.4%	81.5%	46.5%	47.0%	56.4%
Fishing	67.5%	81.5%	63.6%	63.8%	65.9%

Activity	Garfield County	Piute County	Sanpete County	Sevier County	Wayne County
Horseback riding	40.5%	37.0%	24.6%	22.1%	22.2%
Orienteering/geo-caching	7.8%	16.0%	9.6%	11.3%	11.1%
Rock hounding	24.3%	16.0%	22.4%	21.0%	50.0%
Visiting historical sites	60.7%	57.7%	65.4%	60.8%	66.7%
Resort skiing/snowboarding	14.2%	7.7%	15.3%	6.3%	13.5%
Backcountry skiing/snowboarding	3.8%	7.7%	11.3%	1.6%	8.1%
Snowshoeing	4.8%	7.7%	4.8%	4.0%	13.5%
Snowmobiling	9.5%	15.4%	16.0%	10.4%	16.2%
ATV riding	58.1%	92.9%	53.5%	58.6%	61.5%
Dirt bike riding	10.7%	19.2%	9.7%	12.7%	13.9%
Four-wheel driving/jeeping	40.0%	66.7%	45.3%	43.6%	59.5%
Sightseeing/pleasure driving	80.0%	88.9%	82.3%	86.7%	87.8%

Table A17-6. Percentage of survey respondents reporting participation in selected non-commodity use activities on Utah public lands during the past 12 months.

Activity	Garfield County	Piute County	Sanpete County	Sevier County	Wayne County
Collecting firewood for home use	56.1%	50.0%	33.6%	26.2%	53.8%
Cutting Christmas trees	46.2%	46.4%	23.6%	35.1%	51.3%
Collecting material for craft projects	24.5%	22.2%	16.7%	20.2%	28.2%
Collecting rocks for home landscaping	30.4%	34.6%	19.8%	28.5%	48.8%
Collecting plants for home landscaping	17.3%	7.7%	9.6%	8.7%	15.8%
Gathering wild mushrooms	1.9%	3.8%	0.0%	2.3%	5.3%
Gathering pinyon nuts	38.6%	38.5%	9.6%	15.6%	41.0%
Gathering berries, herbs, or wild foods	19.1%	22.2%	10.4%	9.4%	13.2%
Collecting fossils, rocks, or minerals	23.4%	29.6%	18.1%	22.7%	35.9%

ATTITUDES AND PREFERENCES REGARDING PUBLIC LAND MANAGEMENT

Two similar sets of survey questions focused on respondents' attitudes and preferences regarding the extent to which various natural resource use activities or management practices should be reduced or increased by those responsible for managing public lands in Utah. Response patterns to these questions are summarized in Table A17-7 and Table A17-8.

The data presented in Table A17-7 indicate that Garfield County respondents were considerably more likely to prefer an increase rather than a decrease in mineral exploration and extraction, timber harvest, exploration for and development of oil and gas resources, protection of fish and wildlife habitat, thinning of forested areas to reduce wildfire risk, livestock grazing, and development of water storage and delivery systems on Utah public lands. They were also more likely to prefer a reduction in the designation of wilderness areas and in protection of endangered species. As indicated in Table A17-8, Garfield County respondents were also more likely to prefer an increase rather than a reduction in provision of road access to recreation areas, provision of hunting opportunities, development of trails for off-highway motorized recreation, development of trails for non-motorized recreation, regulations that restrict motorized vehicles to designated trails, and development of visitor facilities to increase tourism.

As indicated in Table A17-7, Piute County respondents were considerably more likely to prefer an increase rather than a decrease in mineral exploration/extraction, timber harvest, oil and gas development, protection of fish and wildlife habitat, use of controlled burns to improve ecological conditions, thinning of forested areas to reduce wildfire risk, and development of water storage and delivery systems. They were also likely to express a preference for a reduction in the designation of wilderness areas, and a reduction in protection of endangered species. Table A17-8 reveals that Piute County respondents also were much more likely to prefer an increase rather than a decrease in the provision of road access to recreation areas, provision of hunting opportunities, development of trails for off-highway motorized recreation, and regulations to limit the noise and emissions from snowmobiles and ATVs.

Table A17-7 reveals that Sanpete County respondents were much more likely to express a preference for increased rather than decreased emphasis on mineral exploration/extraction, timber harvest, oil and gas development, protection of fish and wildlife habitat, use of controlled burns to improve ecological conditions, thinning of forested areas to reduce wildfire risk, and development of water storage and delivery systems. Interestingly, they were also somewhat more likely to prefer an increase rather than a decrease in protection of endangered species and in livestock grazing. As indicated in Table A17-8, respondents from Sanpete County were also considerably more likely to prefer an increase rather than a decrease in road access to recreation areas, hunting opportunities, development of trails for non-motorized recreation, regulations that would require motorized vehicles to stay on designated trails, regulations that would limit noise and emissions from snowmobiles and ATVs, and development of visitor facilities to increase tourism.

Sevier County respondents were considerably more likely to prefer an increase rather than a decrease in mineral exploration/extraction, timber harvest, oil and gas development, protection of fish and wildlife habitat, use of controlled burns to improve ecological conditions, thinning of forested areas to reduce wildfire risk, livestock grazing, and development of water storage and delivery systems (see Table A17-7). They were also much more likely to prefer an increase rather than a decrease in road access to recreation areas, hunting opportunities, trails for off-highway motorized recreation, trails for non-motorized recreation, regulations that require motorized vehicles to stay on designated trails, and visitor facilities to increase tourism (Table A17-8).

Finally, the data reported in Table A17-7 reveal that Wayne County respondents were substantially more likely to express a preference for increased emphasis on mineral exploration/extraction, timber harvest, oil and gas development, protection of fish and wildlife habitat, thinning of forested areas to reduce wildfire risk, livestock grazing, and development of water storage and delivery systems. They were also considerably more likely to prefer a decrease as opposed to an increase in designation of wilderness areas. In addition, as indicated in Table A17-8, Wayne County respondents were much more likely to prefer an increase rather than a decrease in road access to recreation areas, hunting opportunities, trails for non-motorized recreation, regulations that would require motorized vehicles to stay on designated trails, regulations to limit noise and emissions from snowmobiles and ATVs, and visitor facilities for tourists.

Table A17-7. Survey respondents' attitudes regarding the extent to which various activities occurring on Utah public land should be reduced or increased. [a]

Type of use/activity	Garfield County		Piute County		Sanpete County		Sevier County		Wayne County	
	Reduce	Increase	Reduce	Increase	Reduce	Increase	Reduce	Increase	Reduce	Increase
Mineral exploration/extraction	11.9%	63.5%	4.8%	38.1%	15.0%	35.0%	12.6%	39.5%	19.4%	44.4%
Timber harvest	5.8%	73.6%	0.0%	46.1%	11.2%	62.4%	11.8%	48.8%	21.1%	50.0%
Designation of wilderness areas	66.7%	14.2%	46.2%	7.7%	33.1%	26.8%	46.4%	15.2%	50.0%	22.5%
Exploration for/development of oil and gas resources	9.2%	70.6%	8.0%	56.0%	17.7%	46.0%	13.6%	48.8%	24.3%	40.5%
Protection of important fish and wildlife habitat	13.1%	36.9%	18.5%	37.0%	7.1%	47.7%	4.7%	47.6%	15.0%	50.0%
Protection of endangered species	50.4%	20.5%	42.3%	26.9%	22.2%	39.7%	31.2%	24.8%	33.3%	30.7%
Use of controlled burns to improve ecological conditions	42.9%	25.2%	20.0%	48.0%	19.5%	37.3%	14.9%	31.4%	28.9%	39.5%
Thinning of forested areas to reduce wildfire risk	8.3%	70.0%	0.0%	76.0%	8.8%	67.2%	4.8%	66.9%	5.4%	67.5%
Livestock grazing	7.4%	52.1%	18.5%	18.5%	14.3%	27.0%	14.5%	29.9%	7.5%	40.0%
Designation of wild and scenic rivers	38.8%	20.7%	34.8%	13.0%	24.1%	24.2%	20.7%	22.3%	31.6%	31.6%
Developing water storage and delivery systems to meet needs of nearby communities	3.3%	84.3%	3.8%	57.7%	2.3%	78.5%	2.3%	72.7%	2.6%	76.9%

a. Original response categories were "major reduction" and "moderate reduction" (combined to create "reduce") and "major increase" and "minor increase" (combined to create "increase"). "Stay about the same" responses are not reported here.

Table A17-8. Survey Respondents' Attitudes Regarding the Extent to Which the Emphasis Placed on Various Activities Occurring on Utah Public Land Should be Reduced or Increased by Public Land Managers. [a]

Type of use/activity	Garfield County		Piute County		Sanpete County		Sevier County		Wayne County	
	Reduce	Increase	Reduce	Increase	Reduce	Increase	Reduce	Increase	Reduce	Increase
Permitting of commercial guiding or outfitter services	14.8%	22.6%	19.2%	11.5%	19.7%	12.0%	25.4%	10.2%	5.3%	21.1%
Providing road access to recreation areas	7.4%	66.1%	10.7%	67.8%	12.8%	49.6%	8.3%	54.9%	12.5%	37.5%
Providing hunting opportunities	7.4%	52.9%	14.8%	44.4%	10.5%	40.3%	11.5%	50.0%	5.1%	46.1%
Developing trails for off-highway motorized recreation	21.5%	53.7%	17.9%	35.8%	28.3%	42.5%	20.9%	48.9%	30.8%	35.9%
Developing trails for hiking, biking, and other non-motorized recreation	11.7%	50.0%	11.1%	22.2%	12.1%	53.2%	17.6%	53.5%	5.0%	42.5%
Regulations that require motorized vehicles to stay on designated trails	21.3%	48.4%	18.5%	33.3%	12.5%	56.2%	13.0%	52.7%	20.0%	55.0%
Regulations that limit levels of noise and emissions from snowmobiles and ATVs	24.4%	36.1%	10.7%	39.3%	17.9%	45.5%	20.6%	37.3%	12.8%	51.2%
Developing visitor facilities to increase tourism	12.5%	51.7%	22.2%	33.3%	18.9%	36.0%	18.5%	38.5%	15.8%	42.1%

a. Original response categories were "major reduction" and "moderate reduction" (combined to create "reduce") and "major increase" and "minor increase" (combined to create "increase"). "Stay about the same" responses are not reported here.

APPENDIX 18—FACTORY BUTTE SRMA RMZs AND MANAGEMENT PRESCRIPTIONS

INTRODUCTION

The Proposed Resource Management Plan/Final Environmental Impact Statement (Proposed RMP/Final EIS) creates a special recreation management area (SRMA) in the Factory Butte Area, with three recreation management zones (RMZ) described in greater detail below. The three zones are: (1) Off-highway Vehicle (OHV) Play Areas RMZ, (2) Motorized Touring RMZ, and (3) Landmarks RMZ. For the entire SRMA, the market and market strategy are as follows:

Market Strategy: Destination Recreation—Tourism. The SRMA is isolated from major population centers; therefore, visitors to this general area usually include this particular area on their itinerary.

Market: International, national, regional, and local OHV user groups and families (including commercial groups) seeking an extreme OHV riding experience. Also includes photographers (commercial and non-commercial) and sight-seers along scenic Highway 24, who view the badlands topography, the Factory Butte landmark, and the desert vegetation.

SRMA Management Objectives: A SRMA plan to manage for visitors' activities and experiences would be completed within 5 years from the signing of the Richfield Field Office (RFO) RMP Record of Decision (ROD). Management prescriptions for kiosks and monitoring would apply to all the RMZs.

KIOSKS

Kiosks would be designed and placed to provide information and interpretation to SRMA users in a non-intrusive format. Kiosks and other facilities would be developed as generally shown on the Proposed Factory Butte SRMA map. Kiosks would be placed at either end of the Swing Arm City to Factory Butte Corridor, one at the gap in the fence toward the Swing Arm City Open Area side and one at the south boundary line of the Factory Butte Open Area. A kiosk would be placed where the fence begins next to Factory Butte Road. Two other kiosks would be strategically placed along the portion of Factory Butte Road that bounds the eastern and northeastern side of the open area around the Factory Butte. A kiosk would be placed in Swing Arm City Open Area and the Caineville Cove Inn Open Area. Suggested features of these kiosks are as follows:

- The kiosks should be developed, built, and put up in coordination and cooperation with local rider groups, and adoption or sponsorship by such groups should be encouraged. This will encourage their respect for the kiosks and decrease the likelihood of vandalism.
- Informational kiosks should educate riders about the importance of responsible ridership and of confining their cross-country riding to open areas.
- Informational kiosks should encourage riders to be aware of illegal cactus collecting and report any suspicious activity to law enforcement officials.
- Informational kiosks should encourage riders to be on the lookout for other riders who are not obeying the boundary signs and report them to law enforcement officials.
- Informational kiosks should educate riders about the importance of balanced use and respecting the boundary signs, as a way of preserving the opportunity for open cross-country riding in the Factory Butte area.

- Information in the Swing Arm City Open Area and the Factory Butte Open Area kiosks should clearly illustrate how riders may legally ride to and from each open area using the corridor.

MONITORING/MITIGATION

Regular monitoring is imperative to ensure the resources are able to be used in a renewable manner. Monitoring would occur for visual, soil, special status species, and recreational experiences.

Inventory and monitoring of the threatened and endangered (T&E) cactus species in the area has been occurring and that effort would continue. It is imperative that the Bureau of Land Management (BLM) continues to gain knowledge about these species, where populations are located, and what, if any, continued impacts are occurring to these populations. OHV area designations or routes may be revised in the future based on the findings from monitoring resource conditions and trends in the area. The effect of OHVs on soils in the Factory Butte area has been monitored through the use of collection pits and photo plots for several years and would continue.

Compliance with the new OHV designations for the Factory Butte area would mainly be accomplished by law enforcement Rangers. The improvements outlined below are instrumental in identifying boundaries, making compliance and enforcement more effective and efficient. Assistance from other agencies may be requested, especially during high-use periods (holiday weekends). Additional presence on the ground would be most beneficial during the first several years of the new designations, when visitors to the area are learning about the new designations and the areas that would best accommodate the recreational opportunity they seek. When the authorized officer determines through monitoring that OHVs are causing considerable adverse impacts to certain areas, the authorized officer shall close or restrict such areas and notify the public. BLM could impose limitations on the types of vehicles allowed on specific designated routes if monitoring indicates that a particular type of vehicle is causing disturbance to the soil, visual, special status species, or vegetative resources, by off-road travel.

Mitigation measures have been incorporated into the proposed action such as considering placement of structures on the landscape, use of previously disturbed areas and ensuring continued access for permitted uses. Potential negative impacts have been minimized to the extent practicable. For example, visual contrasts to the landscape have been addressed and would be consistent with management objectives. In addition, surveys and clearances would be conducted before specific trails and recreation facilities (e.g., fences, kiosks, bathrooms) would be developed.

ZONE 1. OHV PLAY AREAS RMZ

Recreation Niche: OHV users seeking the technical riding opportunities provided by the badland topography.

Recreation Management Objectives: By the year 2015, manage this zone to provide opportunities for site users to engage in sustainable, easy-to-access day-use and multi-day motorized recreation, providing no less than 75 percent of visitors and affected community residents at least a “moderate” realization of these benefits (i.e., 3.0 on a probability scale, where 1=not at all; 2=somewhat; 3=moderate; and 4=total realization).

Primary Activities: Driving among badlands, motorized hill climbing, camping along badland fringes, photography, spending time with friends and family.

Experiences: Savoring the sensory experience of an outdoor setting, relishing group togetherness, enjoying risk-taking adventures, appreciating nature, escaping everyday stress and boredom, and enjoying easy and convenient access to natural resources.

Benefits:

- Personal—Improved OHV skills, bonding with family and friends, stress relief, enhanced awareness and appreciation of natural resources, greater self-reliance, and renewed human spirit.
- Community—Stronger sense of community dependency on public lands and greater family/group bonding.
- Economic—Enhance local economy via purchases (gas, groceries, lodging, OHV/outdoor equipment).
- Environmental—Increased awareness and protection of natural landscapes.

Setting Characteristics:

- Physical—Mostly front country and middle country with regard to naturalness and facilities.
- Social—front country around dispersed campsites and staging areas; front country and middle country among badlands.
- Administrative—dispersed campsites and staging areas; informational kiosks, fencing and carsonite signage along the edges of the RMZ.

Specific Management Prescriptions:

The following areas would be designed as OHV open areas:

- Swing Arm City Open Area (2,600 acres)
- Swing Arm City to Factory Butte Corridor
- Factory Butte Open Area (5,300 acres)
- Caineville Cove Inn Open Area (100 acres).

Swing Arm City Open Area (2,600 acres)

The Swing Arm City Open Area boundary would be as shown on the Proposed Factory Butte SRMA map. Carsonite signs should be placed along this entire boundary, spaced close enough so that at least two signs are visible to riders at all times depending on type of terrain. The signs should advise riders which areas are and are not open to cross-country travel.

One formal entrance would be constructed into the Swing Arm City OHV Open Area from Highway 24. An Encroachment Permit would be obtained from the Utah Department of Transportation (UDOT) for this single entrance. A standard area sign would be located adjacent to this main entrance road identifying the area as the "Swing Arm City OHV Open Area." The access road would be upgraded for approximately three-fourths mile into the OHV area. Road base, proper drainage and a 24-inch x 20-inch culvert would be required to allow access during all weather conditions. For safety reasons, all other entrances from Highway 24 would be closed. At the north end of the access road, two or three OHV loading/unloading ramps would be constructed for the safety of visitors to the open riding area. Many accidents occur in conjunction with loading and unloading motorcycles and four-wheel vehicles from truck beds. The loading/unloading ramps would be wedge-shaped platforms that would enable a vehicle to back up to the ramp and load/unload on a level surface, thereby providing a safer option to visitors using the OHV open area.

A fence would be placed along the flat land situated above and to the northeast of Swing Arm City, in a direction roughly parallel to the northeast rim of Swing Arm City. The distance between the northeast rim of Swing Arm City and the fence itself should be approximately 500 feet. The approximate course of the fence would be as follows in Township 28 South, Range 9 East: Beginning at a point along the Factory Butte Road near the southeast quarter of Section 11, the fence would run in a northwesterly direction through the southeast quarter of Section 11, the northwest quarter of Section 11, the northeast quarter of Section 10, and the southwest quarter of Section 3 until it reaches the benches of North Caineville Mesa that are too steep for riders to pass. There would be a gap in the fence somewhere in the northwest quarter of Section 11 or the northeast quarter of Section 10. This gap in the fence would mark the beginning of the corridor through which riders would travel between the Swing Arm City Open Area and the Factory Butte Open Area.

Other improvements would be added to enhance visitor services and for the protection of health and safety. These improvements would include upgraded access into the open OHV area, improved parking areas at kiosk or trailhead locations if necessary, loading/unloading ramp(s), and a restroom. The upgraded access would consist of engineering proper drainage, installing culverts, and adding surface material (road base and gravel) to enable access during wet weather conditions. Parking areas would be improved only if necessary for the health and safety of visitors and would include leveling of the minimum area necessary and/or adding gravel. Initially, a double CXT vault toilet would be placed on Factory Bench Road near Highway 24. One toilet building would be located at the existing disturbed location on the east side of Factory Bench Road. The existing pull-out would be upgraded and used for the parking area. This would be a concrete building that is pre-cast and delivered ready to place at the site. The building would measure 12 feet x 17 feet. The surface disturbance and footprint on the ground would be the same. The ground disturbance during construction would be somewhat larger to facilitate excavation of the vaults and accommodate the use of heavy equipment to set the vaults and building. Vault toilets may be added for visitor convenience or if sanitation issues arise at other locations. The color and texture of the outside walls and roof of the buildings would be chosen to match the surrounding area. Parking barriers or two-rail post and pole fences would be placed around these structures to protect them from damage by vehicles. The barriers or fencing would be kept to the minimum necessary to protect the improvements.

Swing Arm City to Factory Butte Corridor

Riders passing through a narrow corridor would be more likely to cause rutting. A wider corridor means less likelihood of rutting from vehicle trails. Thus, the corridor between Swing Arm City and the open area around Factory Butte should be 30 feet wide. The corridor would commence at the gap in the fence, and run in a northerly direction until it reaches the above-described south boundary of the open area around Factory Butte. The course of the corridor would be as shown on the Proposed Factory Butte SRMA map, only the corridor should pass through the southeast quarter of Section 34, Township 27 South, Range 9 East when it crosses Neilson Wash. Carsonite signs would be placed along both sides of this corridor, spaced close enough so that at least two signs would be visible to riders at all times depending on type of terrain. The signs will advise riders which areas are and are not open to cross-country travel.

Factory Butte Open Area (5,300 acres)

The Factory Butte Open Area boundary would be as shown on the Proposed Factory Butte SRMA map. The proposed boundary starts at a point on the Factory Butte Road nearest the southeast corner of Township 27 South, Range 9 East Section 25 and runs northerly along Factory Butte Road until that road reaches a point approximately in the center of the southwest quarter of Section 11; thence it departs from Factory Butte Road and runs southwesterly along the edge of the bluegate shale through the southwest quarter of Section 11, the southeast quarter of Section 10, the northwest quarter of Section 15, and the

southeast quarter of Section 16; thence it runs south-southwesterly through the western half of Section 21, the northwestern quarter of Section 28, and the southeastern quarter of Section 29 until it reaches the south boundary line of Section 29; thence it runs east along the south boundary line of Sections 29, 28, 27, 26, and 25 until it reaches Factory Butte Road at the point of beginning. Carsonite signs should be placed along this entire boundary, spaced close enough so that at least two signs are visible to riders at all times depending on type of terrain. The signs should advise riders which areas are and are not open to cross-country travel. Approximately 1 mile of fencing would be constructed along the south boundary of the State Section 32 in Township 27 South, Range 9 East. This fence would provide additional protection and a controlled monitoring area between the North Caineville Mesa and North Caineville Reef.

Caineville Cove Inn Open Area (100 acres)

The Caineville Cove Inn Open Area boundary would be as shown on the Proposed Factory Butte SRMA map. This would entail portions of Sections 25, 26, and 27 in Township 28 South, Range 8 East. Many tourists who come to the general area stay at the motel, and they would be able to step outside their motel and recreate in the immediate vicinity. The north boundary of the Caineville Cove Inn Open Area would be fenced to limit use to the open area.

ZONE 2. MOTORIZED TOURING RMZ

Recreation Niche: Scenic and extensive auto-touring and OHV route network accessing badland scenery, badland landmarks, and desert flora and fauna.

Recreation Management Objectives: By the year 2015, manage this zone to provide opportunities for community residents and regional visitors to engage in sustainable, easy-to-access, primarily day-use motorized recreation, providing no less than 75 percent of visitors and affected community residents at least a "moderate" realization of these benefits (i.e., 3.0 on a probability scale, where 1=not at all; 2=somewhat; 3=moderate; and 4=total realization).

Primary Activities: Driving OHVs or auto-touring, viewing scenery and wildlife, photography, spending time with friends and family, participating in organized tours, and walking or hiking.

Experiences: Savoring the sensory experience of an outdoor setting, relishing group togetherness, enjoying moderate risk-taking adventures, appreciating nature, and escaping everyday stress and boredom.

Benefits:

- Personal—Improved OHV and driving skills, bonding with family and friends, stress relief, enhanced awareness and appreciation of natural resources, greater self-reliance, and renewed human spirit.
- Community—Stronger sense of community dependency on public lands and greater family/group bonding.
- Economic—Enhanced local economy via purchases (gas, groceries, lodging, OHV/outdoor equipment).
- Environmental—Increased awareness and protection of natural landscapes.

Setting Characteristics:

- Physical—Mostly middle country along routes, but backcountry away from routes with regard to naturalness and facilities.

- Social—Mostly middle country along routes with regard to group sizes and contacts, but generally backcountry away from routes.
- Administrative—Front country along routes and staging areas; middle and backcountry away from routes.

Specific Management Prescriptions:

All motorized use (OHV or auto-touring) would be limited to designated routes (Proposed Factory Butte SRMA map).

ZONE 3. LANDMARKS RMZ

Recreation Niche: Scenic use of these areas from a distance by OHV and auto-touring users, offering outstanding landmarks, views, and exceptionally scenic setting. Also includes non-motorized use of the North Caineville Mesa Area of Critical Environmental Concern (ACEC) and the Factory Butte, including hiking, scrambling, and climbing.

Recreation Management Objectives: By the year 2015, manage this zone to provide opportunities for community residents and regional visitors to engage in sustainable, primarily day-use non-motorized recreation, providing no less than 75 percent of visitors and affected community residents at least a "moderate" realization of these benefits (i.e., 3.0 on a probability scale, where 1=not at all; 2=somewhat; 3=moderate; and 4=total realization).

Primary Activities: Viewing scenery and wildlife, photography, spending time with friends and family, participating in and/or viewing organized tours, hiking, rock scrambling, and climbing.

Experiences: Savoring the sensory experience of an outdoor setting, relishing group togetherness, enjoying risk-taking adventures, appreciating nature, escaping everyday stress and boredom.

Benefits:

- Personal—Bonding with family and friends, stress relief, enhanced awareness and appreciation of natural resources, greater self-reliance, and renewed human spirit.
- Community—Stronger sense of community dependency on public lands and greater family/group bonding.
- Economic—Enhanced local economy via purchases (gas, groceries, lodging, outdoor equipment).
- Environmental—Increased awareness and protection of natural landscapes.

Setting Characteristics:

- Physical—Backcountry in the RMZ, but middle and front country and rural when viewing from routes.
- Social—Backcountry in the RMZ, but middle and front country and rural when viewing from routes.
- Administrative—Backcountry in the RMZ, but middle and front country and rural when viewing from routes.

Specific Management Prescriptions:

Close the North Caineville Mesa ACEC to OHV and other motorized travel.

Factory Butte OHV and Special Recreation Management Areas

BLM

Public Land | State Land | National Forest | Private Land | National Park

Proposed Factory Butte SRMA

Proposed Open to cross-country travel

Closed to OHV Use

Kiosk Sites | Restroom | Loading Ramp

OHV Boundary Fences

Fenced Corridor to Open areas

N

0 1.25 2.5 5 Miles

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of this data for individual use or aggregate use with other data.

APPENDIX 19—WILDLAND FIRE RESOURCE PROTECTION MEASURES AND REASONABLE AND PRUDENT MEASURES, TERMS AND CONDITIONS, AND REPORTING REQUIREMENTS IDENTIFIED THROUGH SECTION 7 CONSULTATION

The existing land use plans that comprise Alternative N (no action alternative) were amended September 26, 2005, with the *Finding of No Significant Impact and Decision Record (UT-USO-04-01) Utah Land Use Plan Amendment for Fire and Fuels Management*. The decisions from that document have been brought forward in their entirety. A majority of the decisions are located in the Management Common to All Alternatives section of the Proposed Resource Management Plan/Final Environmental Impact Statement (PRMP/FEIS) Chapter 2 under the Wildland Fire Ecology heading. This appendix contains the remainder of the decisions, in the form of resource protection measures and terms and conditions identified through Section 7 consultation, that were too long to be easily integrated into Chapter 2 of the PRMP/FEIS.

RESOURCE PROTECTION MEASURES IDENTIFIED IN THE UTAH LAND USE PLAN AMENDMENT FOR FIRE AND FUELS MANAGEMENT

Applicable Fire Management Practices:		
SUP: Wildfire Suppression WFU: Wildland Fire Use for Resource Benefit	RX: Prescribed Fire NF: Non-Fire Fuel Treatments	ESR: Emergency Stabilization and Rehabilitation
Air		
A-1 Evaluate weather conditions, including wind speed and atmospheric stability, to predict impacts from smoke from prescribed fires and wildland fire use. Coordinate with Utah Department of Environmental Quality for prescribed fires and wildland fire use. (RX, WFU)		
A-2 When using chemical fuels reduction methods, follow all label requirements for herbicide application. (NF)		
Soil and Water		
SW-1 Avoid heavy equipment use on highly erosive soils (soils with low soil loss tolerance), wet or boggy soils and slopes greater than 30%, unless otherwise analyzed and allowed under appropriate National Environmental Policy Act (NEPA) evaluation with implementation of additional erosion control and other soil protection mitigation measures. (SUP, WFU, RX, NF, ESR)		
SW-2 There may be situations where high intensity fire will occur on sensitive and erosive soil types during wildland fire, wildland fire use or prescribed fire. If significant areas of soil show evidence of high severity fire, evaluate the area for soil erosion potential and downstream values at risk and implement appropriate or necessary soil stabilization actions such as mulching or seeding to avoid excessive wind and water erosion. (SUP, WFU, RX)		
SW-3 Complete necessary rehabilitation on firelines or other areas of direct soil disturbance, including but not limited to waterbarring firelines, covering and mulching firelines with slash, tilling and/or subsoiling compacted areas, scarification of vehicle tracks, off-highway vehicles (OHV) closures, seeding and/or mulching for erosion protection. (SUP, WFU, RX)		
SW-4 When using mechanical fuels reduction treatments, limit tractor and heavy equipment use to periods of low soil moisture to reduce the risk of soil compaction. If this is not practical, evaluate sites, post treatment and if necessary, implement appropriate remediation, such as subsoiling, as part of the operation. (NF)		
SW-5 Treatments such as chaining, plowing, and roller chopping shall be conducted as much as practical on the contour to reduce soil erosion (BLM ROD 13 Western States Vegetation Treatment EIS 1991). (NF, ESR)		

Applicable Fire Management Practices:		
SUP: Wildfire Suppression WFU: Wildland Fire Use for Resource Benefit	RX: Prescribed Fire NF: Non-Fire Fuel Treatments	ESR: Emergency Stabilization and Rehabilitation
SW-6 When using chemical fuel reduction treatments follow all label directions, additional mitigations identified in project NEPA evaluation and the Approved Pesticide Use Proposal. At a minimum, provide a 100-foot-wide riparian buffer strip for aerial application, 25 feet for vehicle application and 10 feet for hand application. Any deviations must be in accordance with the label. Herbicides would be applied to individual plants within 10 feet of water where application is critical (BLM ROD 13 Western States Vegetation Treatment EIS 1991). (NF)		
SW-7 Avoid heavy equipment in riparian or wetland areas. During fire suppression or wildland fire use, consult a resource advisor before using heavy equipment in riparian or wetland areas. (SUP, WFU, RX, NF, ESR)		
SW-8 Limit ignition within native riparian or wetland areas. Allow low-intensity fire to burn into riparian areas. (RX)		
SW-9 Suppress wildfires consistently with compliance strategies for restoring or maintaining the restoration of water quality impaired [303(d) listed] water bodies. Do not use retardant within 300 feet of water bodies. (SUP, WFU)		
SW-10 Plan and implement projects consistent with compliance strategies for restoring or maintaining the restoration of water quality impaired [303(d) listed] water bodies. Planned activities shall take into account the potential impacts on water quality, including increased water yields that can threaten fisheries and aquatic habitat; improvements at channel crossings; channel stability; and downstream values. Of special concern are small headwaters of moderate to steep watersheds; erosive or saline soils; multiple channel crossings; at-risk fisheries; and downstream residents. (RX, NF, ESR)		
Vegetation		
V-1 When restoring or rehabilitating disturbed rangelands, non-intrusive, nonnative plant species are appropriate for use when native species: (1) are not available; (2) are not economically feasible; (3) cannot achieve ecological objectives as well as nonnative species; and/or (4) cannot compete with already established native species (Noxious Weeds Executive Order 13112 2/3/1999; BLM Manual 9015; BLM ROD 13 Western States Vegetation Treatment EIS 1991). (RX, NF, ESR)		
V-2 In areas known to have weed infestations, aggressive action will be taken in rehabilitating firelines, seeding and follow-up monitoring and treatment to reduce the spread of noxious weeds. Monitor burned areas and treat as necessary. All seed used will be tested for purity and for noxious weeds. Seed with noxious weeds will be rejected (ROD 13 Western States Vegetation Treatment EIS 1991). (SUP, WFU, RX, NF, ESR)		
Special Status Species		
SSS-1 Initiate emergency Section 7 consultation with United States Fish and Wildlife Service (USFWS) upon the determination that wildfire suppression may pose a potential threat to any listed threatened or endangered species or adverse modification of designated critical habitat. (SUP)		
SSS-3 Prior to planned fire management actions, survey for listed threatened and endangered and non-listed sensitive species. Initiate Section 7 consultation with USFWS as necessary if proposed project may affect any listed species. Review appropriate management, conservation and recovery plans and include recovery plan direction into project proposals. For non-listed special status plant and animal species, follow the direction contained in the BLM 6840 Manual. Ensure that any proposed project conserves non-listed sensitive species and their habitats and ensure that any action authorized, funded or carried out by the Bureau of Land Management (BLM) does not contribute to the need for any species to become listed. (RX, NF, ESR)		
SSS-4 Follow terms and conditions identified in the Biological Opinion (see section below). (SUP, WFU, RX, NF, ESR)		
Fish and Wildlife		
FW-1 Avoid treatments during nesting, fawning, spawning, or other critical periods for wildlife or fish. (RX, NF, ESR)		
FW-2 Avoid if possible or limit the size of, wildland fires in important wildlife habitats such as, mule deer winter range, riparian and occupied Greater sage-grouse habitat. Use resource advisors to help prioritize resources and develop Wildland Fire Situation Analyses and Wildland Fire Implementation Plans when important habitats may be impacted. (SUP, WFU)		

Applicable Fire Management Practices:		
SUP: Wildfire Suppression WFU: Wildland Fire Use for Resource Benefit	RX: Prescribed Fire NF: Non-Fire Fuel Treatments	ESR: Emergency Stabilization and Rehabilitation
FW-3 Minimize wildfire size and frequency in sagebrush communities where sage-grouse habitat objectives will not be met if a fire occurs. Prioritize wildfire suppression in sagebrush habitat with an understory of invasive, annual species. Retain unburned islands and patches of sagebrush unless there are compelling safety, private property and resource protection or control objectives at risk. Minimize burn-out operations (to minimize burned acres) in occupied sage-grouse habitats when there are no threats to human life and/or important resources. (SUP)		
FW-4 Establish fuel treatment projects at strategic locations to minimize size of wildfires and to limit further loss of sagebrush. Fuel treatments may include greenstripping to help reduce the spread of wildfires into sagebrush communities. (RX, NF)		
FW-5 Use wildland fire to meet wildlife objectives. Evaluate impacts to sage-grouse habitat in areas where wildland fire use for resource benefit may be implemented. (WFU, RX)		
FW-6 Create small openings in continuous or dense sagebrush (>30% canopy cover) to create a mosaic of multiple-age classes and associated understory diversity across the landscape to benefit sagebrush-dependent species. (WFU, RX, NF)		
FW-7 On sites that are currently occupied by forests or woodlands, but historically supported sagebrush communities, implement treatments (fire, cutting, chaining, seeding etc.) to re-establish sagebrush communities. (RX, NF)		
FW-8 Evaluate and monitor burned areas and continue management restrictions until the recovering and/or seeded plant community reflect the desired condition. (SUP, WFU, RX, ESR)		
FW-9 Utilize the Emergency Stabilization and Rehabilitation (ESR) program to apply appropriate post-fire treatments within crucial wildlife habitats, including sage-grouse habitats. Minimize seeding with non-native species that may create a continuous perennial grass cover and restrict establishment of native vegetation. Seed mixtures shall be designed to re-establish important seasonal habitat components for sage-grouse. Leks shall not be re-seeded with plants that change the vegetation height previously found on the lek. Forbs shall be stressed in early and late brood-rearing habitats. In situations of limited funds for ESR actions, prioritize rehabilitation of sage grouse habitats. (ESR)		
Wild Horses and Burros		
WHB-1 Avoid fencing that would restrict access to water. (RX, NF, ESR)"		
Cultural Resources		
CR-1 Cultural resource advisors shall be contacted when fires occur in areas containing sensitive cultural resources. (SUP)		
CR-2 Wildland fire use is discouraged in areas containing sensitive cultural resources. A programmatic agreement is being prepared to cover the finding of adverse effects to cultural resources associated with wildland fire use. (WFU)		
CR-3 Potential impacts of proposed treatment shall be evaluated for compliance with the National Historic Preservation Act (NHPA) and the Utah Statewide Protocol. This shall be conducted prior to the proposed treatment. (RX, NF, ESR)		
Paleontology		
P-1 Planned projects shall be consistent with BLM Manual and Handbook H-8270-1, Chapter III (A) and III (B) to avoid areas where significant fossils are known or predicted to occur or to provide for other mitigation of possible adverse effects.(RX, NF, ESR)		
P-2 In the event that paleontological resources are discovered in the course of surface fire management activities, including fires suppression, efforts shall be made to protect these resources. (SUP, WFU, RX, NF, ESR)		
Forestry		
F-1 Planned projects shall be consistent with Healthy Forest Restoration Act Section 102(e) (2) to maintain or contribute to the restoration of old-growth stands to a pre-fire suppression condition and to retain large trees contributing to old growth structure. (SUP, WFU, RX, NF)		

Applicable Fire Management Practices:		
SUP: Wildfire Suppression WFU: Wildland Fire Use for Resource Benefit	RX: Prescribed Fire NF: Non-Fire Fuel Treatments	ESR: Emergency Stabilization and Rehabilitation
F-2 During planning, evaluate opportunities to utilize forest and woodland products prior to implementing prescribed fire activities. Include opportunities to use forest and woodland product sales to accomplish non-fire fuel treatments. In forest and woodland stands, consider developing silvicultural prescriptions concurrently with fuel treatments prescriptions. (RX, NF)		
Livestock Grazing		
LG-1 Coordinate with permittees regarding the requirements for non-use or rest of treated areas. (SUP, WFU, RX, NF, ESR)		
LG-2 Rangelands that have been burned, by wildfire, prescribed fire or wildland fire use, will be ungrazed for a minimum of one complete growing season following the burn. (SUP, WFU, RX)		
LG-3 Rangelands that have been re-seeded or otherwise treated to alter vegetative composition, chemically or mechanically, will be ungrazed for a minimum of two complete growing seasons. (RX, NF, ESR)		
Recreation and Visitor Services		
Rec-1 Wildland fire suppression efforts will preferentially protect Special Recreation Management Areas and recreation site infrastructure in line with fire management goals and objectives. (SUP)		
Rec-2 Vehicle tracks created off established routes will be obliterated after fire management actions in order to reduce unauthorized OHV travel. (SUP, WFU, RX, NF, ESR)		
Lands and Realty		
LR-1 Fire management practices will be designed to avoid or otherwise ensure the protection of authorized rights-of-way and other facilities located on the public lands, including coordination with holders of major rights-of-way systems within rights-of-way corridors and communication sites. (WFU, RX, NF, ESR)		
LR-2 Fire management actions must not destroy, deface, change or remove to another place any monument or witness tree of the Public Land Survey System. (SUP, WFU, RX, NF, ESR)		
Hazardous Waste		
HW-1 Recognize hazardous wastes and move fire personnel to a safe distance from dumped chemicals, unexploded ordnance, drug labs, wire burn sites or any other hazardous wastes. Immediately notify BLM Field Office hazmat coordinator or state hazmat coordinator upon discovery of any hazardous materials, following the BLM hazardous materials contingency plan. (SUP, WFU, RX, NF, ESR)		
Mineral Resources		
M-1 A safety buffer shall be maintained between fire management activities and at-risk facilities. (SUP, WFU, RX)		
Wilderness and Wilderness Study Areas		
Wild-1 The use of earth-moving equipment must be authorized by the field office manager. (SUP, WFU, RX, ESR)		
Wild-2 Fire management actions will rely on the most effective methods of suppression that are least damaging to wilderness values, other resources and the environment, while requiring the least expenditure of public funds.(SUP, WFU)		
Wild-3 A resource advisor shall be consulted when fire occurs in Wilderness Areas and Wilderness Study Areas (WSA). (SUP, WFU)		

U. S. FISH AND WILDLIFE SERVICE INCIDENTAL TAKE STATEMENT, INCLUDING REASONABLE AND PRUDENT MEASURES, TERMS AND CONDITIONS, AND REPORTING REQUIREMENTS FOR ESA SPECIES OF THE BIOLOGICAL OPINION

The USFWS has completed a biological opinion on the Proposed Action alternative and terms and conditions have been identified as part of that opinion. Together, the resource protection measures and the terms and conditions were incorporated into the Proposed Action to reduce resource conflicts. Species that were addressed in the complete statement contained in the *Finding of No Significant Impact and Decision Record (UT-USO-04-01) Utah Land Use Plan Amendment for Fire and Fuels Management* that do not occur within the decision area or are not affected by management in the EIS alternatives are not include in the Incidental Take Statement below.

Incidental Take Statement

Section 9 of the Act, as amended, prohibits take (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish or wildlife without a special exemption. "Harm" is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering (50 CFR § 173). "Harass" is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering (50 CPR § 17.3).

No exemption from Section 9 of the Act is granted in this biological opinion. The Bureau of Land Management's (BLM) implementation of the Land Use Plan Amendment and Five Fire Management Plans is likely to adversely affect listed species. The likelihood of incidental take, and the identification of reasonable and prudent measures and terms and conditions to minimize such take, will be addressed in project-level, and possibly programmatic-level consultations. Any incidental take and measures to reduce such take cannot be effectively identified at the level of proposed action because of the uncertainty of wildland fire, broad geographic scope, and the lack of site-specific information. Rather, incidental take and reasonable and prudent measures may be identified adequately through subsequent actions subject to Section 7 consultations at the project and/or programmatic scale.

Even though actual take levels are unquantifiable, take will occur through harm and harassment. Therefore, we are providing the following Reasonable and Prudent Measures (RPMs) and terms and conditions to minimize overall take. Implementation of these RPMs and terms and conditions during project planning will also expedite site-specific Section 7 consultation.

Reasonable and Prudent Measures

The USFWS believes that the following RPMs are necessary and appropriate to minimize impacts of incidental take of Utah prairie dog, southwestern willow flycatcher, California condor, bald eagle, Mexican spotted owl, and Siler pincushion cactus:

1. The BLM shall implement measures to minimize mortality or injury of federally listed species due to proposed project activities without placing firefighter personnel at risk. The species that were determined to be "**likely to adversely affected**" by project activities included: Utah prairie dog, southwestern willow flycatcher, California condor, bald eagle, Mexican spotted owl, and Siler pincushion cactus.
2. The BLM shall implement measures to minimize harm to federally listed species through destruction of their suitable or designated critical habitats, without placing firefighter personnel at

risk. The species' habitats that were determined to be "**likely to adversely affected**" by project activities included: Utah prairie dog, southwestern willow flycatcher, California condor, bald eagle, Mexican spotted owl, and Siler pincushion cactus.

Terms and Conditions

In order to be exempt from the prohibitions of Section 9 of the Act, the BLM must comply with the following terms and conditions, which implement the RPMs described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary. The following terms and conditions apply to all species covered under this biological opinion, and are to be implemented in addition to the Applicant Committed Measures described in the Proposed Action:

General Terms and Condition

1. To implement Reasonable and Prudent Measure 1:
    a. Before the beginning of each fire season, a threatened and endangered species education program will be presented to all personnel anticipated to be within federally listed species habitats during suppression activities. This program will contain information concerning the biology and distribution of listed species throughout the Fire Management Plan Planning Area, their legal status, fire suppression goals and restrictions within suitable and critical habitat. Following training, each individual will sign a completion sheet to be placed on file at the local BLM office.
    b. All project employees (including fire fighting personnel) shall be informed as to the definition of "take", the potential penalties (up to $200,000 in fines and one year in prison) for taking a species listed under the Endangered Species Act, and the terms and conditions provided in this biological opinion.
    c. A qualified resource advisor will be assigned to each wildfire that occurs in or threatens listed species habitat. The resource advisor's role is help define goals and objectives for fire suppression efforts and informs the Incident Commander (IC) of any restrictions, but does not get involved in specific suppression tactics. Resource advisors shall oversee fire suppression and suppression rehabilitation activities; to ensure protective measures endorsed by the Incident Commander are implemented.
    d. For pre-planned projects, the Authorized Officer shall designate an individual as a contact representative who will be responsible for overseeing compliance with the Applicant Committed Measures and terms and conditions contained in this biological opinion, and providing coordination with the USFWS. The representative will have the authority to halt activities which may be in violation of these conditions, unless human health and safety or structures are at risk.
    e. Project-related personnel shall not be permitted to have pets accompany them to the project site.
    f. If available, maps shall be provided to local dispatch centers showing general locations of listed species. Local BLM or Utah Division of Wildlife Resources (UDWR) biologists shall be consulted for specific locations if fires occur within or near the general locations delineated on the map.
    g. In occupied habitat, pre- and post-monitoring of federally listed species' responses to the pre-planned treatments will be conducted.
2. To implement Reasonable and Prudent Measure 2:
    a. Fingers or patches of unburned vegetation within burned areas shall not be burned out as a fire suppression measure unless required for safety concerns or due to high reburn potential.

b. Emergency stabilization and rehabilitation efforts must focus on areas where there is a potential of non-native species to spread, particularly within suitable habitat for federally listed species.
c. The specific seed mix and areas to be seeded within suitable habitat for federally listed and sensitive species wilt be determined through coordination and Section 7 consultation with the USFWS.
d. In occupied habitat burned by wildland fire, the recovery of vegetation shall be monitored, including establishment and monitoring of paired plots, inside and outside of the burned area unless the BLM and the USFWS concur that monitoring is not required.
e. Site-specific projects under the Land Use Plan Amendment and Fire Management Plans will maintain, protect, or enhance the primary constituent elements of designated critical habitat in all implementation activities.
f. The effectiveness of suppression activities and threatened and endangered species conservation measures shall be evaluated after a fire in coordination with the USFWS. Procedures shall be revised as needed.
g. In occupied habitat, pre- and post-monitoring of federally listed species' habitat responses to the pre-planned treatments will be conducted.
h. Temporarily close burned areas to off highway vehicles (OHV) within occupied habitat after a wildland fire event until vegetation and soils recover. Consultation with the USFWS may determine that an area may remain open if there is no threat to the species or habitat.
i. Consult with the USFWS to determine the need to obscure decommissioned trails and roads and illegal OHV trails within occupied habitat after a wildland fire event to prevent the trails and roads from re-opening.

Utah Prairie Dog

The following terms and conditions are in addition to the general terms and conditions listed above and apply to the Utah prairie dog:

1. To implement Reasonable and Prudent Measures 1 and 2:
    a. Wildfires will be suppressed before they reach a prairie dog colony ("prairie dog colony" refers to any occupied Utah prairie dog colony) or after they exit a colony. Active suppression efforts will not occur within a colony unless human health and safety or structures are at risk.
    b. Only hand lines will be authorized within colonies.
    c. Normally, only water shall be used on fires that occur within prairie dog colonies. If the fire Incident Commander decides that the situation requires use of chemical retardants in order to protect life and property, they may be used. The chemical composition will be supplied to the USFWS during emergency consultation.
    d. All vehicles shall stay on existing roads within colonies, except as stated in (e). Storage of equipment and materials shall not occur within 0.25 mile of colonies. Vehicle maintenance shall not occur within these areas.
    e. The resource advisor, biologist, or biological monitor (someone who is either qualified with a biological background or has been trained by the resource advisor) ensures that prairie dogs and their burrows are protected or avoided by walking in front of engines, tracked vehicles, or other firefighting-related vehicles within occupied prairie dog colonies.
    f. Vehicles shall not exceed a speed of 10 miles per hour (cross country) in occupied Utah prairie dog colonies unless a higher speed is determined to be prudent for safety reasons.
    g. Within colonies, precautions shall be taken to ensure that contamination of the site by fuels, motor oils, grease, etc. does not occur and that such materials are contained and properly disposed of off site. Inadvertent spills of petroleum-based or other toxic materials shall be

cleaned up and removed immediately, unless during an emergency event (wildfire suppression). In which case the spill shall be cleaned up as soon as practical after the emergency situation is controlled.

h. Camps associated with fire suppression activities shall be situated outside occupied habitat.
i. If a dead or injured Utah prairie dog is located, initial notification must be made to the USFWS Division of Law Enforcement, Cedar City, Utah at telephone 435-865-0861 or to the Cedar City office of the UDWR at telephone number 435-865-6100. Instruction for proper handling and disposition of such specimens will be issued by the Division of Law Enforcement. Care must be taken in handling sick or injured animals to ensure effective treatment and care and in handling dead specimens to preserve biological material in the best possible state.

Southwestern Willow Flycatcher

The following terms and conditions are in addition to the general terms and conditions listed above and apply to the southwestern willow flycatcher:

1. To implement the Reasonable and Prudent Measure 1:
    a. Prior to planned project activities, potentially affected habitat will be surveyed according to USFWS protocol *(A Southwestern Willow Flycatcher Natural History Summary and Survey Protocol; Technical Report NPS/NAUCPRS/NRTR-97/12*).
    b. Except where fires are active in occupied habitat, minimize unnecessary low-level helicopter flights during the breeding season (April 1–September 30). If safety allows, approach bucket dip sites at a 90-degree direction to rivers to minimize flight time over the river corridor and occupied riparian habitats. Locate landing sites for helicopters at least 0.25 mile from occupied flycatcher habitat unless human safety or property dictates otherwise.
    c. Minimize use of chainsaws or bulldozers to construct firelines through occupied or suitable habitat except where necessary to reduce the overall acreage of occupied habitat or other important habitat areas that would otherwise be burned.
    d. Implement activities to reduce hazardous fuels or improve riparian habitats (prescribed burning or vegetation treatments) within occupied or unsurveyed suitable habitat for southwestern willow flycatchers only during the non-breeding season (October 1 to March 31).
2. To implement Reasonable and Prudent Measure 2:
    a. Riparian fuel reduction actions shall be considered as experimental, and initially conducted only in unoccupied habitats until the success and ramifications are better understood. Efficacy of these actions as a fire management tool, and effects on bird habitat quality, shall be tested in a scientifically explicit, controlled fashion (Appendix L in U.S. Fish and Wildlife Service 2002).
    b. In occupied or suitable flycatcher habitat, creation of firebreaks might render the habitat unsuitable (Appendix L in U.S. Fish and Wildlife Service 2002). As long as human safety and property allows, firebreaks shall be conducted in unoccupied sites, outside of proposed critical habitat, or within proposed critical habitat under the following situations:
        i. The habitat does not meet the Primary Constituent Elements of the proposed critical habitat as listed in 69 FR 60706-60786, October 12, 2004;
        ii. Minimal fireline necessary to prevent unacceptable losses of occupied habitat; and
        iii. Between fuel concentrations and flycatcher breeding sites to prevent fires from spreading into breeding sites (Appendix L in U.S. Fish and Wildlife Service 2002).

c. Prescribed fire shall be avoided in occupied habitat and considered only as experimental management techniques if dealing with suitable unoccupied habitat (Appendix L in U.S. Fish and Wildlife Service 2002).
d. Fires in occupied habitat and adjacent buffer zones shall be rapidly suppressed if safety allows.

California Condor and Bald Eagle

The following terms and conditions are in addition to the general terms and conditions listed above and apply to the California condor and bald eagle:

1. To implement the Reasonable and Prudent Measure 1:
   a. If California condors or bald eagles are found inhabiting (nesting) within the action area of a pre-planned project, a buffer of 1 mile surrounding the nesting area will be designated as non-treatment zones (Romin and Muck 2002).
   b. If California condors are observed within 0.25 mile of an open water source, such as an inflatable storage tank or "pumpkin," the water storage tank will be covered when not in use.

Mexican Spotted Owl

The following terms and conditions are in addition to the general terms and conditions listed above and apply to the Mexican spotted owl:

1. To implement Reasonable and Prudent Measure 1:
   a. Pre-planned fuels reduction projects within Mexican spotted owl designated critical habitat shall be designed to enhance habitat requirements for the Mexican spotted owl as well as for the valuable prey species they rely upon.
2. To implement Reasonable and Prudent Measure 2:
   a. Fire suppression shall be considered for wildfires in designated critical habitat.

Threatened or Endangered Plants

The following terms and conditions are in addition to the general terms and conditions listed above and apply to the federally listed plants:

1. To implement Reasonable and Prudent Measure 1:
   a. Do not allow wildland fire use within occupied habitat unless agreed to by the BLM and the USFWS.
   b. When feasible (human life or property are not at risk) firebreaks shall be constructed down slope of plants and populations; if firebreaks must be sited upslope, buffers of 100 feet minimum between surface disturbances and plants and populations will be incorporated.
2. To implement Reasonable and Prudent Measure 2:
   a. Do not allow wildland fire use within occupied habitat unless agreed to by the BLM and the USFWS.
   b. For pre-planned projects within known or potential habitat, site inventories shall be conducted to determine habitat suitability prior to initiation of project activities, at a time when the plant can be detected.
   c. For riparian/wetland-associated species, avoid loss or disturbance of riparian habitats.
   d. Limit disturbances to and within suitable habitat by staying on designated routes where feasible.

e. Limit new access routes created by the project.
f. Following a wildland fire event, place signing to limit ATV travel in sensitive burned areas.

Siler Pincushion Cactus

The following terms and conditions are in addition to the general terms and conditions listed above as well as the terms and conditions for threatened and endangered plant species. These terms and conditions apply specifically to the Siler pincushion cactus:

1. To implement Reasonable and Prudent Measures 1 and 2:
    a. Follow and implement the restrictions to pesticide use within suitable Siler pincushion cactus habitat developed by the Environmental Protection Agency (EPA). These limitations were excerpted from the EPA's Pesticides: Endangered Species Protection Program (http://www.epa.gov/oppfead l/endanger/arizona/cocon.htm#brady):
        i. If the active ingredient is 2,4-D (all forms), ATRAZINE, CLOPYRALID, DICAMBA (all forms), DICHLORPROP (2,4-DP), HEXAZINONE, MCPA (all forms), PARAQUAT, PICLORAM (all forms), or TEBUTHIURON, then do not apply this pesticide in the species habitat. For ground applications do not apply within 20 yards of the habitat, or within 100 yards for aerial applications.
        ii. If the active ingredient is OXYFLUORFEN (granular or non-granular), then do not apply this pesticide in the species habitat. For ground applications do not apply within 100 yards of the habitat, or within ¼ mile for aerial applications.
        iii. If the active ingredient is either METRIBUZIN or SULFOMETURON METHYL, then do not apply this pesticide on rights-of-way in the species habitat.

Closing

The USFWS believes that an unquantifiable amount of incidental take will occur in the form of harm and harassment as a result of the proposed actions. The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed actions. The BLM must immediately provide an explanation of the causes of the taking and review with the USFWS the need for possible modification of the reasonable and prudent measures.

Reporting Requirements

Upon locating dead, injured, or sick listed species, immediate notification must be made to the USFWS Salt Lake City Field Office at (801) 975-3330 and the USFWS Division of Law Enforcement, Ogden, Utah, at (801) 625-5570. Pertinent information including the date, time, location, and possible cause of injury or mortality of each species shall be recorded and provided to the USFWS. Instructions for proper care, handling, transport, and disposition of such specimens will be issued by the USFWS Division of Law Enforcement. Care must be taken in handling sick or injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible state.

The BLM shall submit a report to the USFWS on or before (December 1) of each year in which fire management activities occurred within occupied habitat. For the listed and candidate species covered under this consultation, the report shall include: 1) the amount of potential and/or occupied habitat affected by wildfire (i.e. stream miles burned, percentage of drainage burned, fire severity map); 2) to the extent possible, the number of individuals killed from direct and indirect effects of wildfire; 3) any habitat and/or population monitoring efforts from past wildfire events; 4) a copy of the burned area emergency stabilization and rehabilitation plan; 5) implementation and effectiveness monitoring of burned area

emergency stabilization and rehabilitation treatments; 6) implementation and effectiveness monitoring of the standard operating procedures; 7) recommendations for enhancing the effectiveness of the standard operating procedures; and 8) any recommendations for additional standard operating procedures. The first report shall be due to the USFWS on (December 1, 2005). The address for the Utah Fish and Wildlife Office is:

Field Supervisor, U.S. Fish and Wildlife Service
2369 West Orton Circle, Suite 50
West Valley City, Utah 84119
Telephone: (801) 975-3330

ADDITIONAL RESOURCE PROTECTION MEASURES DEVELOPED BY THE BLM AND THE U. S. FISH AND WILDLIFE SERVICE

In addition to the resource protection measures listed in the land use plan amendment, the following conservation measures were developed through the Section 7 consultation process. These resource protection measures were identified in the U.S. Fish and Wildlife Service's Biological Opinion (p. 42). That document states that "the BLM has incorporated these measures…by reference to their [Biological Assessment]." Species that were addressed in these measures that do not occur within the decision area or are not affected by management in the EIS alternatives are not included. Additional resource protection measures are as follows:

- Manage natural and prescribed fire regimes to protect or improve Utah prairie dog habitat.
- Within Utah prairie dog habitat, reseeding would be implemented according to the Utah Prairie Dog Recovery Plan.
- Manage prescribed fire and wildland fire use within Mexican spotted owl Protected Activity Centers (PAC) to ensure protection of nesting, roosting, and foraging habitats.
- Wildland fire suppression would be prioritized for use in Mexican spotted owl PACs. When feasible, fire camps associated with suppression efforts would be built outside of the PACs and nest protection areas.
- For treatments within suitable habitat for listed species, pre- and post-monitoring would take place as determined on a case-by-case basis.
- Incorporate the standards and guidelines recommended by the Inland Native Fish Strategy (USFS 1995).
- As per the decision of the resource advisor, avoid construction of firelines using mechanized equipment across the stream channel. If used, the mechanized equipment would terminate at, and not cross, the stream channel.
- Avoid transferring water from one watershed into another for the purpose of water drops, as this could aid in the spread of water-borne diseases such as whirling disease.
- Avoid retardant use in any riparian wetland communities.
- Restricted use of mechanical treatments and hand tools.
- Per-burn acreage limitations of 5-100 acres, as long as human life or property are not threatened.
- Prior to planned fire management actions, survey for listed threatened and endangered and non-listed sensitive species. Review appropriate management, conservation, and recovery plans and include recovery plan direction into project proposals, if listed. Ensure that any proposed project conserves non-listed sensitive species and their habitats and ensure that any action authorized, funded, or carried out by the BLM does not contribute to the need for any species to become listed.

In addition to the Resource Protection Measures listed under the LUP, the Richfield Support Center had instituted the following measures into their FMP.

Measures designed to protect threatened, endangered, or candidate species (plant and animals) include:

- END-4 A Resource Advisor must coordinated with the plant specialist in the Fillmore field office in order to authorize any dozer use. (SUP, WFU0)
- END-5 Contact the Resource Advisor for all fire management activities that may affect the Utah Prairie Dog (SUP, WFU, RX, NF, ESR)
- END-6 Contact the Resource Advisor for all fire management activities that may affect the southwestern willow flycatcher. Manage fires according to the conservation plan. (SUP, WFU, RX, NF, ESR)
- END-7 Protect Mexican spotted owl habitat. Manage fires according to the Mexican spotted owl recovery plan and "Suggestions for the Management of Mexican Spotted Owls." Contact the Resource Advisor for all fire management activities.
- END-8 Suppress all wildland fires in critical sage grouse, prairie dog, or pygmy rabbit habitat. (SUP)
- END-9 Contact the Resource Advisor for fire management activities in Bonneville cutthroat trout or Boreal toad habitat. (SUP, WFU, RX, NF, ESR)

APPENDIX 20—SUMMARY OF CHANGES FROM THE DRAFT RMP/EIS TO THE PROPOSED RMP/FINAL EIS

Table A20-1. Summary of Changes from the Draft RMP/EIS to the Proposed RMP/Final EIS

Chapter	Description of the Change	Rationale
All	Revised the PRMP/FEIS to place focus on the Proposed RMP.	To clearly identify the Proposed RMP to the reader.
All	Removed the DRMP/DEIS Alternative B (the Preferred Alternative) into the PRMP/FEIS Proposed RMP.	The Proposed RMP consists of a combination of all the alternatives, including Alternative B in response to public comments and internal review.
1	Updated Chapter 1 to identify additional meetings with Native American Tribes.	To document additional meetings with Native American Tribes.
1	Revised the language regarding tar sands based on the Programmatic Environmental Impact Statement on Oil Shale and Tar Sands Leasing	Consistency with Final Programmatic Environmental Impact Statement on Oil Shale and Tar Sands Leasing.
1	Revised the language regarding RS 2477.	Based on legal review.
1	Added a section to describe the changes from the DRMP/DEIS to the PRMP/FEIS.	To document changes made to the PRMP/FEIS.
2	Italicized and added an asterisk and footnote to identify implementation level decisions.	To provide clarification between RMP and implementation level decisions.
2	Revised the air quality common to all management actions to include management actions to work cooperatively with state, local, and tribal entities to address regional air quality issues.	Based upon discussions with the State of Utah
2	Added temporary non-renewable use of grazing to reduce site-specific fuels (i.e. cheat grass). This is an implementation level action that will be determined on a case-by-case basis under the terms and conditions of the grazing permit.	Based on public comment and/or further BLM review. Biological treatments were considered in the range of alternatives in the DRMP/DEIS.
2	Adjusted the riparian buffer zone to include the 100-year floodplain or a 330 foot buffer whichever is greater.	To protect the sensitive resources around riparian areas. Alternative N provided a 500 foot buffer which covered the 100-year floodplains.
2	Revised the Vegetation common to all management actions to implement noxious weed and invasive species control actions as per national guidance and local weed management plans.	To be consistent with national guidance and local weed management plans.
2	Manage Bull Creek Archaeological District (4,800 acres) as open	To protect the cultural resources of the site that is listed on the

Chapter	Description of the Change	Rationale
	with major constraints (NSO)	National Register of Historic Areas.
2	Removed the cultural resource site use allocations table.	Based on further BLM review and discussions with the State of Utah.
2	Revised VRM Classes based on other management decisions. • VRM Class I: no change • VRM Class II: 40,800 acre increase • VRM Class III:17,700 acre decrease • VRM Class IV: 23,100 acre decrease	VRM Class I acres did not change because these areas consist of WSAs. VRM Class II, III, and IV acres changed due to management decisions associated with non-WSA lands with wilderness characteristics and the Factory Butte SRMA. These changes to non-WSA lands with wilderness characteristics were made to preserve, protect, and maintain wilderness characteristics. The VRM Class for the OHV Play Areas RMZ in the Factory Butte SRMA would be designated as VRM IV.
2	Moved the sage grouse management actions from the fish and wildlife section to the special status species section.	To be consistent with the status of the sage grouse.
2	Added a sage grouse seasonal restriction for 2 miles around leks and added a no surface occupancy stipulation of 1/2 miles around sage grouse leks. Allow no surface disturbing or otherwise disruptive activities in greater sage-grouse winter habitat from December 15 through March 14.	Oil and gas leasing would be limited to a year-round, half-mile NSO around Greater sage grouse leks with a no surface disturbance timing restriction (March 15–July 15) for 2 miles. Previously, a 2-mile timing restriction would have taken effect on March 15 and lasted through June 1. However, at the suggestion of the State of Utah, the half-mile NSO provides a strategy to prevent the sage grouse from becoming a threatened or endangered species. This change would affect only four identified sage grouse leks in the RFO and would result in only 2 miles of NSO (replacing the previous CSU restriction), which could still be accessed through directional drilling. Additionally, this change would affect only an area of very low development potential. This was a change that was outside the range of alternatives in the DRMP/DEIS.
2	Changed the acreages of wildlife habitats to reflect the revised Utah Division of Wildlife Resources (UDWR) winter crucial habitat. • Mule Deer: 225,400 acre increase • Elk: 55,300 acre increase • Pronghorn: 51,900 acre increase • Bighorn Sheep: 122,700 acre decrease • Bison: 7,700 acre increase	Based on updated UDWR winter crucial habitat.
2	Revised the Wildlife management actions to allow for compensatory mitigation on an “as appropriate” basis where it can	Based on public comments and further BLM review.

Chapter	Description of the Change	Rationale
	be performed onsite, and on a voluntary basis where it is performed offsite, or, in accordance with current guidance.	
2	Clarified that coordination with the National Park Service would occur if grazing use by the burro herd increases on the Glen Canyon National Recreation Area.	Based on comments from the National Park Service.
2	Included management actions for approximately 78,600 acres of non-WSA lands with wilderness characteristics in the Proposed RMP. Protect the 12 areas (78,600 acres) of non-WSA lands with wilderness characteristics through the following land allocations and prescriptions: • Designate as Visual Resource Management (VRM) Class II • Limit motorized use to designated routes • Retain lands in public ownership • Designate as an Avoidance Area for rights-of-way (ROW) • Designate leasing category as no surface occupancy (NSO), no exceptions, waivers, or modifications • Close to mineral material sales • Designate as unavailable for further consideration for coal leasing • Continue maintenance and use of existing facilities • Prohibit private or commercial woodland harvest or seed collection Healthy Lands Initiative projects could be considered where they improve the overall goals and objectives for managing the wilderness characteristics of these areas	To preserve, protect, and maintain wilderness characteristics.
2	Allow commercial and non-commercial live plant and seed collecting by permit, except in WSAs, non-WSA lands with wilderness characteristics, and the Fremont Gorge wild and scenic river.	To preserve, protect, and maintain wilderness characteristics and to protect outstanding remarkable values.
2	Increased the size of the Factory Butte SRMA by 21,800 acres with 8,500 acres open to cross-country OHV use.	Based on public comment and further BLM review.
2	Decreased the size of the Big Rocks SRMA by 175 acres.	Based on public comment and to protect cultural resources.
2	Removed the two hour criterion from SRP requirements for organized groups.	Based on public comment and consistency with adjoining field offices.
2	Revised the OHV use areas as follows:	To provide unique motorized recreational opportunities.

Chapter	Description of the Change	Rationale
	• Open: 990 acre increase • Limited: 490 acre decrease • Closed: 500 acre decrease.	
2	Revised the OHV open areas as follows: • Factory Butte Play Area: 5,900 acre increase • Big Rocks Trials Area: 180 acre decrease • Glenwood Play Area: 2,300 acre decrease • Aurora Play Area: 10 acre decrease • Mayfield Open Area: Eliminated.	The Factory Butte Play Areas boundary was increased based on public comments. The Big Rocks Trials Area boundary decreased due to cultural resource concerns. The Glenwood Play Area boundary decreased to protect special status species. The Mayfield Open Area was eliminated to protect special status species.
2	Revised the OHV route designations as follows: • Designated routes: 46 mile increase • Designated routes with seasonal closures or size/width restriction: 55 mile increase • Closed routes: 141 mile increase.	Revisions to the OHV route designations were made in the Proposed RMP based on comments received on the Draft RMP, as well as continued work to finalize BLM GIS data and Interdisciplinary Team review. Factors that resulted in changes to the route designations were: • Coordination and consistency with adjacent NPS, FS and BLM PFO travel designations: Comments were received regarding the inconsistency of some route designations and seasonal or size/width restrictions with these adjacent federal agencies. These routes were re-assessed and adjustments made for consistency in the designations of these routes. Although these consistency reviews made slight changes to all route designation categories, the majority of the changes resulted in slight increases in designated route miles or designated routes with seasonal closures or size/width restrictions. • Data errors or inconsistencies identified within Public Comments: A variety of public comments were received regarding route designations. Some of these comments pointed out data errors which were resolved. Other comments identified specific conflicts or resource issues related to whether the route should be designated or closed. These comments were reviewed and resolved in those cases where there was sufficient supporting information and GIS data. This resulted in some additional designated route miles, as well as an increase in closed route miles. • Incorporation of GPS data analyzed during Route Designation Meetings and quality review: In some of the more remote portions of the Richfield Field Office, GPS data analyzed

Chapter	Description of the Change	Rationale
		during route designation meetings was still being incorporated and was unavailable in map form at the time of the Draft RMP. This work to identify the existing route system has been completed and has been included to provide a more accurate Travel Management Plan. Many seismic routes within this area were identified by BLM staff during GPS data collection as abandoned or naturally rehabilitating and no longer receiving use. This resulted in an increase in the total closed route miles within the Proposed RMP.
2	Revised the lands and realty management decisions to give land exchanges with the State of Utah priority consideration to resolve inholdings issues.	Based on discussions with the State of Utah.
2	Increased the ROW avoidance areas to 153,600 acres.	Based on management prescriptions for non-WSA lands with wilderness characteristics.
2	Revised the oil and gas leasing categories as follows: • Areas open to leasing with standard lease terms: 63,700 acre increase • Areas open to leasing subject to controlled surface use and/or timing limitations (CSU): 104,100 acre decrease • Areas open to leasing subject to no surface occupancy (NSO): 43,600 acre increase • Areas closed to leasing: 3,200 acre decrease.	Based on management prescriptions for non-WSA lands with wilderness characteristics, Bull Creek Archaeological District, the Old Woman Front ACEC, and the Fremont Gorge suitable wild and scenic river with a tentative “wild” classification. Changes in the crucial habitat boundaries for wildlife and spatial and seasonal stipulations for sage grouse habitat also adjusted the oil and gas leasing category acreages.
2	Clarified the wording for the no leasing alternative and the livestock grazing adjustments alternative that were considered but eliminated from detailed analysis.	Based on public comment and further BLM review.
2	Revised the minerals and energy common to all management actions to address air quality concerns.	Based upon discussions with the State of Utah.
2	Decreased the areas closed to mineral material disposals by 3,200 acres.	Based on management prescriptions for non-WSA lands with wilderness characteristics.
2	Revised the travel management common to all management actions to allow limitations on types of vehicles allowed on specific designated routes if monitoring indicates that a particular type of vehicle is causing disturbance to the soil, wildlife habitat, cultural or vegetative resources, especially by off-road travel in an area that is limited to designated routes.	Based on public comment and further BLM review.
2	Revised the Transportation common to all management actions to grant the State of Utah reasonable access to State lands for	Based on discussions with the State of Utah.

Chapter	Description of the Change	Rationale
	economic purposes, on a case-by-case basis.	
2	A decrease of 1 (45 originally) mile of inventoried vehicle ways would be designated for use subject to the IMP.	
2	Revised the Wild and Scenic River common to all management actions to work with upstream and downstream water users and applicable agencies to ensure that water flows are maintained at a level sufficient to sustain the values for which affected river segments were designated.	Based on public comments and further BLM review.
2	The Dirty Devil segment (54 miles) was not found suitable for inclusion in the National Wild and Scenic River System.	The Dirty Devil segment was not found suitable because management prescriptions for other resources, resource uses, and special designations (i.e. WSAs, SRMAs, travel management, VRM Class II, oil and gas stipulations).
2	Added management prescriptions for the Old Spanish Trail to work in cooperation with Utah State Parks and Recreation, counties, the Old Spanish Trail Association, and the National Park Service on interpretive and recreation opportunities.	The Old Spanish Trail was recently designated by Congress as a National Historic Trail.
2	Added management prescriptions to coordinate with the NPS and the State of Utah for management and interpretation of scenic byway and backway corridors.	Based on public comments and further BLM review.
3	Added an evaluation of seven proposals for non-WSA lands with wilderness characteristics in the area west of Capitol Reef National Park.	Based on public comment.
3	Clarified that the Cotter decision would apply in providing access to SITLA lands.	Based on public comment and further BLM review.
3	Added language to recognize the importance of climate change and the potential effects it may have on the natural environment.	Based on public comment and further BLM review.
3	Manage under the Bald and Golden Eagle Act instead of the Endangered Species Act.	The bald eagle was delisted and is managed under the Bald and Golden Eagle Act.
3	Acknowledged that there are pygmy rabbits and that there are colonies present in the field office and that the habitat covers less than 1% of field office.	Based on public comment and further BLM review.
3	Clarified the limitation of the application of the size criteria for non-WSA lands with wilderness characteristics.	Based on further BLM review.
3	Added a description of the National Mormon Pioneer Heritage Area.	This area was recently designated by Congress as a National Heritage Area.

Chapter	Description of the Change	Rationale
3	Added descriptions of the scenic byways and highways.	Based on public comment and to make the description of the affected environment more complete.
4	Conducted emissions calculations for each of the Alternatives and the Proposed RMP.	Based on public comment and further BLM review.
4	Revised the non-WSA lands with wilderness characteristics impact analysis to address lands carried forward in the Proposed RMP and those lands not being carried forward in the Proposed RMP.	To address non-WSA lands with wilderness characteristics management prescriptions in the Proposed RMP.
4	Revised the ACEC section to clarify other resource decisions that provide protection to relevant and important values of potential ACECs. In addition, this section was formatted to be consist with other sections in Chapter 4.	Based on public comment and to provide clarification on the protection of relevant and important values of potential ACECs from management actions of other resources and resource uses.
4	Revised the cumulative impact analysis section to clarify incremental effects from past, present and future actions.	Based on public comment and further BLM review.
4	Moved the sage grouse impact analysis from the fish and wildlife section to the special status species section.	To be consistent with the status of the sage grouse.
4	Added language to address global climate change.	Based on public comment and further BLM review.
4	Added to the socioeconomic section an impact analysis from non-WSA lands with wilderness characteristics to Utah School and Institutional Trust Lands Administration (SITLA) lands.	Based on public comments and discussions with the State of Utah.
5	Included a description of the public outreach efforts after the release of the DRMP/DEIS.	Based on additional public outreach activities.
5	Included tables to identify consistency with County Plans and State Law.	To clarify the consistency between the Proposed RMP and County Plans and State Law.
5	Included comments from county and state governments and responses to the comments.	Based on their cooperating agency status.
5	Clarified the text regarding Section 7 consultation with the U.S. Fish and Wildlife.	To provide additional explanation on the Section 7 consultation process.
5	Clarified the text regarding Section 106 consultation with the State Historic Preservation Office.	To provide additional explanation on the Section 106 consultation process.
Appendix 1	Clarified the summary statements for each of the existing and potential ACECs.	To state how the relevant and important values would be protected under management actions for other resources and resource uses.
Appendix 3	Clarified the alternative protection methods for wild and scenic rivers.	To state how the outstandingly remarkable values would be protected under management actions for other resources and resource uses.

Chapter	Description of the Change	Rationale
Appendix 5	Revised the land disposal list.	Based on public comments and further BLM review.
Appendix 9	Added the Travel Management Route Designation Process Appendix.	To describe the process for developing the travel management system.
Appendix 10	Manage under the Bald and Golden Eagle Act instead of the Endangered Species Act.	The bald eagle was delisted and is managed under the Bald and Golden Eagle Act.
Appendix 11	Updated and clarified Appendix 11 - Oil and Gas Leasing Stipulations for the Proposed RMP based upon comments and internal review. New lease notices for threatened and endangered (T & E) species created by U.S. Fish and Wildlife Service have been included.	To be consistent with the BLM Gold Book and in response to U.S. Fish and Wildlife Service comments, public comments, and internal BLM review.
Appendix 11	Replace the "Other Scenic Lands" no surface occupancy (NSO) stipulation with a CSU stipulation for VRM Class 2.	The "Other Scenic Lands" no surface occupancy (NSO) stipulation has been replaced with a CSU stipulation for VRM Class 2. This change was made to specify the scenic resources that would be protected and is within the existing range of alternatives. This change resulted from BLM internal comment and review.
Appendix 11	Clarified the stipulation for surface disturbing proposals involving construction on slopes greater than 30%.	Previously, slopes greater than 40% would have been subject to NSO for DRMP/DEIS Alternatives A through D. Slopes from 21% to 40% would have been subject to a CSU stipulation for all alternatives in the DRMP/DEIS. However, after further review of the soil types and watersheds, BLM determined that a CSU stipulation for slopes greater than 30% would be a more appropriate under the certain conditions. The stipulation has been rewritten to read, "Surface disturbing proposals involving construction on slopes greater than 30% would be avoided. If the action cannot be avoided, rerouted, or relocated then a proposed project should include an erosion control strategy, reclamation and a site plan with a detailed survey and design completed by a certified engineer. This proposal must be approved by the BLM prior to construction and maintenance." This change resulted from BLM internal comment and review. The NSO for slopes greater than 40% was not based on resource conditions, such as evaluating soils, bedrock competency, bedding attitudes, deformation of bedrock (faults or folding), mass movement, slope aspects, climatic conditions, and other factors that could warrant the need to impose such a restriction. The CSU restriction for 30% slope is consistent with the BLM reclamation standard as identified in the Gold Book and in consistent with other plans in the State.
Appendix 11	Specified the conditions for waivers and modifications for wildlife habitat.	These revisions are within the existing range of alternatives considered in the DRMP/DEIS. These revisions reflect current BLM

Chapter	Description of the Change	Rationale
		philosophy on oil and gas leasing stipulations and provide clarification on the purpose and intent of the earlier written stipulations. This change resulted from BLM internal comment and review.
Appendix 11	Added lease notices for the California Condor, Barneby Reed Mustard, Last Chance Townsendia, and Wright Fishhook Cactus, and Winkler Pincushion Cactus	To be current with the latest species lease notices.
Appendix 16	Added the Summary of Management of Non-WSA Lands with Wilderness Characteristics for the Richfield Field Office Proposed RMP/Final EIS Appendix.	To summarize the management decisions for non-WSA lands with wilderness characteristics to be included in the RFO PRMP/FEIS. It also includes a discussion of the interdisciplinary process that occurred before these decisions were made.
Appendix 17	Added the Utah Public Lands Study: Key Social Survey Findings for Garfield, Piute, Sanpete, Sevier, and Wayne Counties Appendix.	To identify research conducted by Utah State University in 2007 to assess the ways in which Utah residents use and value public land resources, and their views about public land management.
Appendix 18	Added the Factory Butte SRMA RMZs and Management Prescriptions Appendix.	To provide additional information and a detailed description of the management prescriptions for the Factory Butte SRMA RMZs.
Appendix 19	Added the Wildland Fire Resource Protection Measures and Reasonable and Prudent Measures, Terms and Conditions, and Reporting Requirements Identified through Section 7 Consultation Appendix.	To be consistent with the latest wildland fire resource protection measures.
Appendix 20	Added the Summary of Changes from the Draft RMP/EIS to the Proposed RMP/Final EIS Appendix.	Based on further BLM review.
Appendix 21	Added the State of Utah Air Quality Letter Appendix.	Based on discussions with the State of Utah.
Maps	A disclaimer was added to the wildlife habitat maps to provide the UDWR data publication dates and a reference to the exceptions, waivers, and modifications listed in Appendix 11.	Based on further BLM review.
Maps	Revised the PRMP/FEIS based on the UDWR wildlife habitat maps.	In August of 2005, the UDWR changed its wildlife habitat classification system. Prior to 2005, the UDWR classification system distinguished between “critical” habitat (an area that provides for biological or behavioral requisites necessary to sustain the existence or perpetuation of a wildlife population) and “high value” (an area that provides for intensive use by the species). The UDWR has been criticized for using the term “critical” because the same term refers to habitat that is federally designated by the United States Fish and Wildlife Service (USFWS) as required by the Endangered Species Act (ESA). “Crucial” habitat boundaries appear larger on the wildlife maps in

<table>
<tr><th>Chapter</th><th>Description of the Change</th><th>Rationale</th></tr>
<tr><td></td><td></td><td>this Proposed RMP because they are a combination of UDWR's old "critical" habitat and "high value" habitat, with some minor modifications. Timing stipulations for each of the species now apply to the whole crucial habitat area. However, it is important to note that the application of waivers, exceptions, and modifications, as outlined in Appendix 11, will be taken into consideration and used where and when applicable for all surface-disturbing activities in these areas. The range of alternatives in the DRMP/DEIS considered both previous UDWR's classifications of "critical" and "high value" habitat. Minor boundary modifications have been made by UDWR, prior to incorporating them into "crucial" habitat boundaries. Because this information was taken into consideration and analyzed in the DRMP/DEIS, these minor changes are not considered significant in terms of resource uses or analysis in this PRMP/FEIS, and therefore a supplement to this EIS is not necessary for this purpose.

BLM accepted these updated boundaries and has incorporated them into the Proposed RMP. Incorporating this information converted more area to Controlled Surface Use (CSU) with wildlife timing restrictions. Oil and gas leasing would still occur in these areas as identified in the DRMP/DEIS, if the exception, modifications, and waiver criteria are met (see Appendix 11).

Changes in Wildlife Habitat Boundaries from the DRMP/DEIS to the PRMP/FEIS
<table><tr><th>Wildlife</th><th>Change in Acres</th></tr><tr><td>Mule Deer</td><td>+224,200</td></tr><tr><td>Elk</td><td>+54,700</td></tr><tr><td>Pronghorn</td><td>+106,100</td></tr><tr><td>Bighorn Sheep</td><td>0</td></tr><tr><td>Bison</td><td>+7,700</td></tr></table></td></tr>
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APPENDIX 21—STATE OF UTAH LETTER ADDRESSING AIR QUALITY

State of Utah

JON M. HUNTSMAN, JR.
Governor

GARY R. HERBERT
Lieutenant Governor

June 6, 2008

Selma Sierra
State Director
BLM Utah State Office
P.O. Box 45155
Salt Lake City, Utah 84145-0155

Dear Director Sierra:

This letter addresses air quality mitigation strategies for the six proposed Resource Management Plans being updated within the State of Utah. The state appreciates BLM's interest in this important issue.

It is the policy of the State of Utah to protect public health and the environment from the harmful effects of air pollution, to ensure that the air in Utah meets standards established under federal and state law, and to maintain an environment that is conducive to continued economic vitality and growth.

The Department of Interior monitors ozone at National Parks in the intermountain west, including: Mesa Verde National Park in Colorado, Grand Canyon National Park in Arizona, Great Basin National Park in Nevada, and Canyonlands National Park in Utah. These sites reflect conditions in areas that have not been subject to intensive development and are therefore generally indicative of background conditions. Monitoring data at these locations demonstrates a gradual upward trend in ozone levels, raising questions about ozone levels region-wide. The state believes additional information is needed regarding current conditions and the potential impacts from increasing development activity, including oil and gas activity. This information should inform future BLM decision making, but managers should not defer management actions in anticipation of better information.

Fortunately, ozone related impacts can be reduced if certain mitigation measures are required on new oil and gas related emission sources. In fact, several neighboring states currently encourage application of just such measures. BLM should include interim nitrogen oxide control measures provided by the state as a required condition of lease approval. These control measures are consistent with control measures suggested by neighboring states and jurisdictions. The state recognizes that performance standards will continue to evolve and supports technological flexibility, provided control measures are at least as effective as those in place elsewhere within the region at the time of site-specific authorization. Performance standards representing the current regional standard can be found in the *Four Corners Air*

Quality Task Force Report of Mitigation Options, DRAFT: Version 7, June 22, 2007. These standards are 2 g/bhp-hr for engines less than 300 HP and 1 g/bhp-hr for engines over 300 HP.

The State of Utah will continue to work with the BLM and others through efforts such as the Four Corners Task Force to address these issues. The state appreciates your cooperation in working to protect air quality related values. If you have any questions about our position, please contact me at (801) 537-9802.

Sincerely,

John Harja
Director
Public Lands Policy Coordination
5110 State Office Building
Salt Lake City, Utah 84114-1107
(801) 537-9802

Cheryl Heying
Director
Division of Air Quality
150 North, 1950 West
Salt Lake City, Utah 84114
(801) 536-4000